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SOIL CHARACTERIZATION AND EXCAVATION MONITORING PLAN FOR TANK SITE 283
NS MAYPORT FL
7/1/2004
TETRA TECH NUS

**Soil Characterization and
Excavation Monitoring Plan
for
Tank Site 283**

Naval Station Mayport
Mayport, Florida



**Southern Division
Naval Facilities Engineering Command
Contract Number N62467-94-D-0888
Contract Task Order 0230**

July 2004

**SOIL CHARACTERIZATION AND EXCAVATION MONITORING PLAN
FOR
TANK SITE 283**

**NAVAL STATION MAYPORT
MAYPORT, FLORIDA**

**COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION-NAVY (CLEAN) CONTRACT**

**Submitted to:
Southern Division
Naval Facilities Engineering Command
2155 Eagle Drive
North Charleston, South Carolina 29406**

**Submitted by:
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**CONTRACT NUMBER N62467-94-D-0888
CONTRACT TASK ORDER 0230**

JULY 2004

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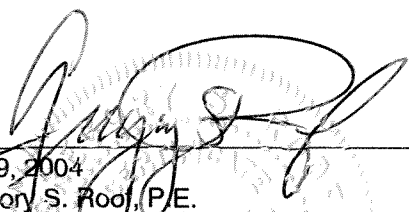
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The professional opinions rendered in this decision document identified as Soil Characterization and Excavation Monitoring Plan for Tank Site 283, Naval Station Mayport, Mayport, Florida were developed in accordance with commonly accepted procedures consistent with applicable standards of practice. Decision documents were prepared under the supervision of the signing engineer and are based on information obtained from others. If conditions are determined to exist differently than those described in this document, then the undersigned professional engineer should be notified to evaluate the effects of any additional information on the project described in this document.



July 9, 2004
Gregory S. Roof, P.E.
Professional Engineering Number 50842
Tetra Tech NUS, Inc. Engineering No. 7988

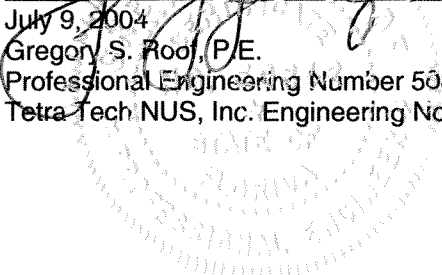
A circular professional engineer seal for Gregory S. Roof. The seal contains the text "FLORIDA" at the top, "PROFESSIONAL ENGINEER" around the perimeter, and "GREGORY S. ROOF" in the center.

TABLE OF CONTENTS

PROFESSIONAL ENGINEER AUTHORIZATION	iii
ACRONYMS	vi
1.0 INTRODUCTION AND SITE INFORMATION	1-1
1.1 INTRODUCTION	1-1
1.2 SITE INFORMATION	1-1
1.3 PRE-EXCAVATION SOIL SAMPLING RESULTS	1-1
2.0 SOIL REMOVAL AND GROUNDWATER MONITORING PLAN	2-1
2.1 PRE-EXCAVATION ACTIVITIES	2-1
2.2 EXCAVATION AND GROUNDWATER MONITORING ACTIVITIES	2-2
2.3 BACKFILL/SITE RESTORATION.....	2-3
2.4 DISPOSAL	2-4
2.5 DOCUMENTATION	2-4
 <u>APPENDICES</u>	
A	FDEP SAR APPROVAL LETTER
B	ANALYTICAL DATA
C	MONITORING WELL SHEET

TABLES

<u>NUMBER</u>		<u>PAGE</u>
1-1	Summary of Fixed-Base Laboratory Soil Sample Results.....	1-5
1-2	Soil Sample Locations Surveyed Coordinates.....	1-12

FIGURES

<u>NUMBER</u>		<u>PAGE</u>
1-1	Site Location Map	1-2
1-2	Site Plan.....	1-3
1-3	Proposed Excavation Area	1-11

ACRONYMS

bls	Below Land Surface
FAC	Florida Administrative Code
FDEP	Florida Department of Environmental Protection
ft	Feet or Foot
GAG	Gasoline Analytical Group
HASP	Health and Safety Plan
KAG	Kerosene Analytical Group
mg/KG	Milligrams per Kilogram
NAVFAC EFD SOUTH	Southern Division, Naval Facilities Engineering Command
NAVSTA	Naval Station
Navy	United States Navy
NFA	No Further Action
PAHs	Polynuclear Aromatic Hydrocarbons
SAR	Site Assessment Report
SCEMP	Soil Characterization and Excavation Monitoring Plan
SCTLs	Soil Cleanup Target Levels
SRR	Soil Removal Report
USEPA	United States Environmental Protection Agency

1.0 INTRODUCTION AND SITE INFORMATION

1.1 INTRODUCTION

This Soil Characterization and Excavation Monitoring Plan (SCEMP) provides historical information and select tasks the subcontractor should complete for the environmental closure of Tank Site 283 at Naval Station (NAVSTA) Mayport, in Mayport, Florida. The impacts affect only the soil. The area of interest is a grass and lime rock covered area used to store equipment and reels of heavy gauge electrical chords used to connect to nearby ships.

1.2 SITE INFORMATION

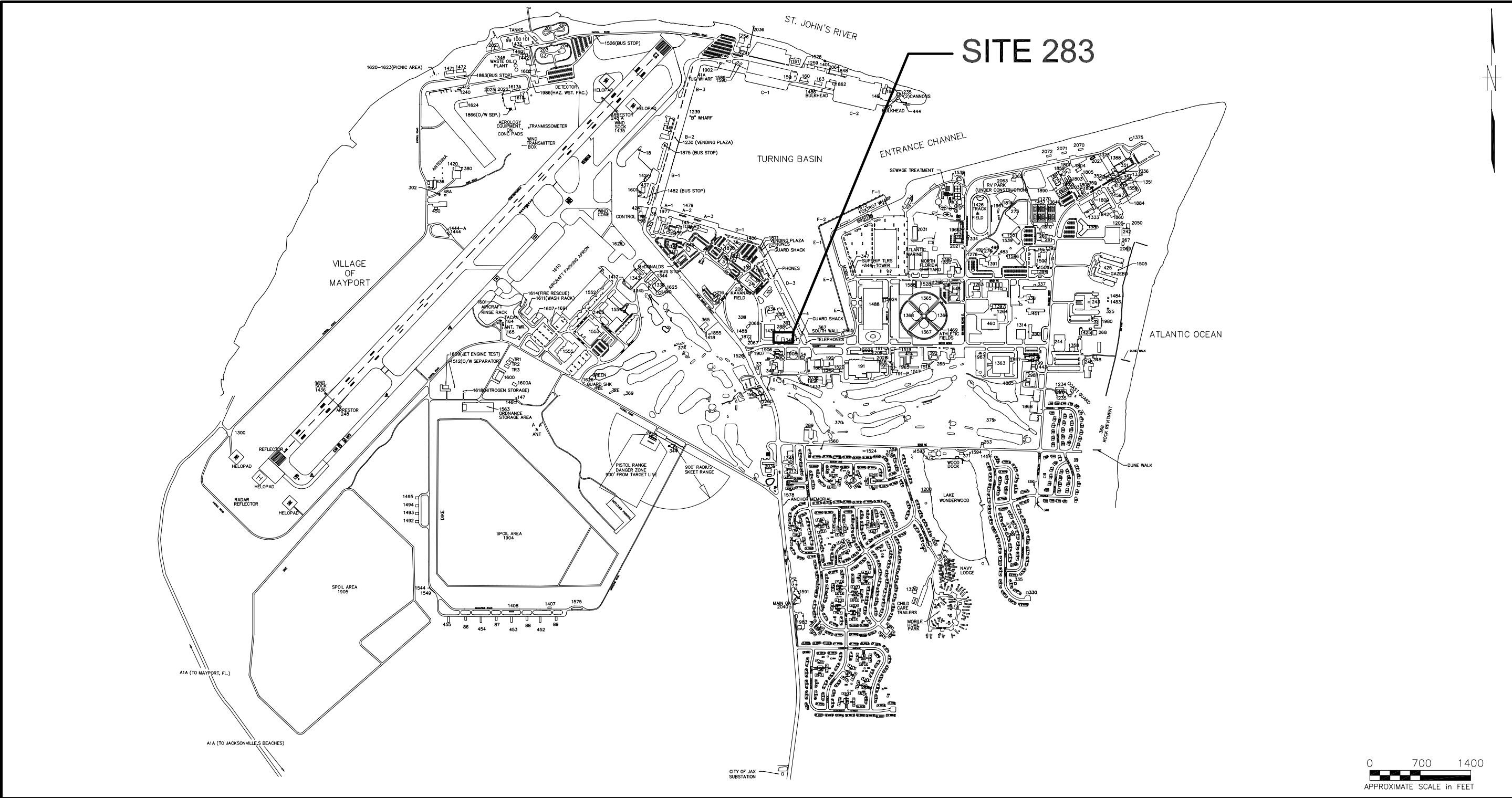
Tank Site 283 is located on NAVSTA Mayport property on the northern side of Massey Avenue approximately 350 feet (ft) to the west of the southern leg of the turning basin. A site location map is provided as Figure 1-1. Since December 1992, a fuel system and generator at Tank Site 283 were removed, but the large water tank (Tank Number 288) remains at the site. The site is located in an industrial/commercial area of the base. Structures in the vicinity of the former tank site include a municipal water tank and maintenance facility garage. The potable water tank is operational, and a main water line is located near the excavation area. A chain link fence encircles the entire grounds. South and east of the municipal water tank is the former location of Building 283. Building 283 was used to house the potable well pumps.


The site is unpaved. The site consists of a lime rock parking area and grass covered areas as shown on a Site Plan provided as Figure 1-2. Vehicles, heavy equipment, and electrical power connector cords for the ships are stored in the gravel parking and grassy areas.

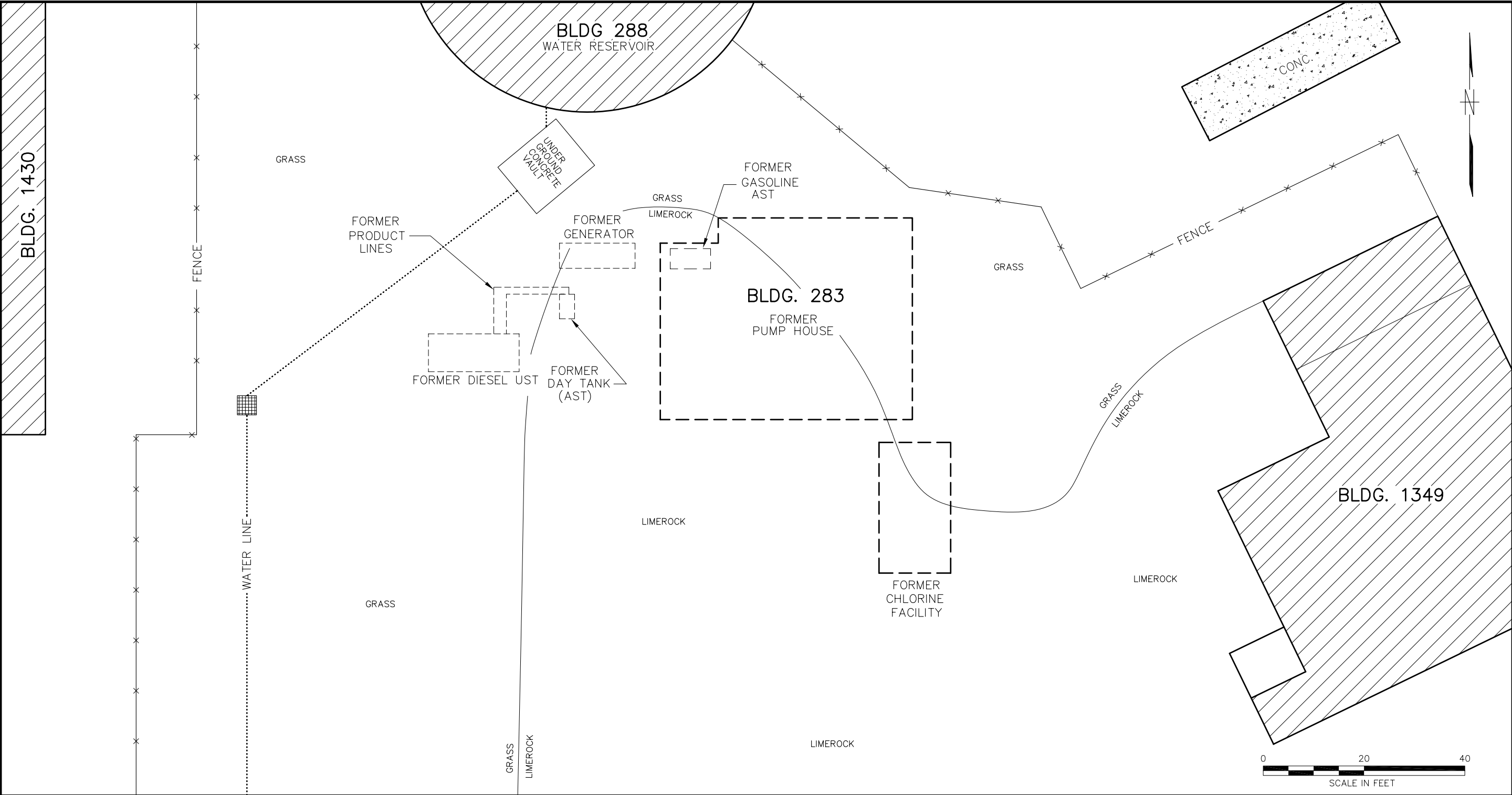
The site is easily accessible and will be able to accommodate all remedial actions to be carried out by the subcontractor. Communication between the contractor and Johnson Controls Hill will need to be maintained to ensure enough time is given to move any items in the area of excavation and to ensure that the operations of an on-site garage are not hindered.


1.3 PRE-EXCAVATION SOIL SAMPLING RESULTS

In accordance with the NAVSTA Mayport Partnering Team-approved closure strategy, Tetra Tech NUS, Inc. conducted additional soil sampling activities designed to narrow the scope of the planned soil removal and to obtain pre-approval of the excavation depths and limits. A copy of the February 13, 2004,



NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES	DRAWN BY LLK	DATE 10/17/02		SITE LOCATION MAP TANK SITE 283 SITE ASSESSMENT REPORT NAVAL STATION MAYPORT MAYPORT, FLORIDA		CONTRACT NO. 4195	
							CHECKED BY	DATE				APPROVED BY	DATE
							COST/SCHED-AREA					APPROVED BY	DATE
							SCALE AS NOTED					DRAWING NO. FIGURE 1-1	REV. 0



NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES	DRAWN BY LLK	DATE 4/27/04		SITE PLAN TANK SITE 283 EXCAVATION PLAN NAVAL STATION MAYPORT MAYPORT, FLORIDA		CONTRACT NO. 4195	
							CHECKED BY	DATE		APPROVED BY	DATE	APPROVED BY	
							COST/SCHED-AREA			APPROVED BY	DATE	DRAWING NO. FIGURE 1-2	
							SCALE AS NOTED					REV. 0	

letter from the Florida Department of Environmental Protection (FDEP), which approved the Site Assessment Report (SAR) and requested remedial action, is provided as Appendix A. Soil sampling was conducted in a series of events between October 2002 and March 2004 from locations SB-10 through SB-49 and tested polynuclear aromatic hydrocarbons (PAHs) using United States Environmental Protection Agency (USEPA) Method 8310. The results of the soil analyses are presented in Table 1-1. Shaded values in Table 1-1 indicate values that exceed residential and/or leachability soil cleanup target levels (SCTLs). Bolded values in Table 1-1 exceed industrial/commercial SCTLs. Only PAH analyses were conducted since prior sampling, as documented in the SAR, had shown the lack of other gasoline analytical group (GAG)/kerosene analytical group (KAG) compounds. Soil samples were collected from 1 ft below land surface (bls) and/or 3 ft bls, which is just above the groundwater table. A copy of the soil analytical results is provided in Appendix B.

The locations and testing results are also presented on Figure 1-3. Green colored locations indicate results below residential criteria. Yellow colored locations indicate PAHs concentrations exceed residential but are less than industrial/commercial criteria. Red locations indicated PAH values in excess of industrial/commercial criteria.

Figure 1-3 also provides the proposed excavation limits. The proposed excavation limits would encompass the areas exceeding industrial/commercial criteria. Per FDEP direction, excavation will continue until a sample location is encountered that is less than the industrial/commercial SCTL criteria. Excavation will include all soils within the area indicated at Figure 1-3 from the ground surface to the top of the water table encountered at 3 ft in depth. Excavation below the water table is not required.

The excavation size is estimated at 1012.72 square ft with an estimated volume of 112.52 cubic yards.

Table 1-2 provides surveyed coordinates for each of the soil sample locations outlining the excavation site. Prior to excavation, the contractor shall have a survey performed to mark the extent of the excavation based on the coordinates provided.

Table 1-1
Summary of Fixed-Base Laboratory Soil Sample Results

Soil Excavation Plan, Tank Site 283
Naval Station Mayport
Mayport, Florida

Compound	Direct Exposure Residential ¹ (mg/kg)	Commercial/ Industrial (mg/kg)	Leachability Based Criteria ¹ (mg/kg)	SB-10	SB-13	SB-14	SB-15	SB-16	SB-17	SB-18	SB-19
				07/10/02	10/03/02	10/03/02	10/03/02	10/03/02	02/24/03	02/24/03	02/24/03
PAHs (USEPA Method 8310) (mg/kg)											
Naphthalene	40	270	1.7	<1.9	<2	<0.42	<0.4	<2.1	<0.0037	0.011	0.2
2-Methylnaphthalene	80	560	6.1	<1.9	<2	<0.42	<0.4	<2.1	<0.0037	0.01	0.19
1-Methylnaphthalene	68	470	2.2	<1.9	<2	<0.42	<0.4	<2.1	<0.0037	0.0077	0.14
Acenaphthylene	1100	11000	27	<3.8	<2	<0.84	<0.81	<4.2	<0.0037	<0.0037	<0.073
Acenaphthene	1900	18000	2.1	<3.8	<2	<0.84	<0.81	<4.2	<0.0037	0.034	0.84
Anthracene	18000	260000	2500	1.74	<2	0.285	<0.4	<2.1	<0.0037	0.051	1.4
Fluorene	2200	28000	160	<1.9	<2	0.304	<0.4	<2.1	<0.0037	0.032	0.84
Benzo(a)anthracene	1.4	5	3.2	3.49	3.99	0.918	<0.4	3.01	0.0037	0.11	2.4
Benzo(a)pyrene	0.1	0.5	8	3.37	2.34	0.626	<0.081	1.78	0.006	0.17	3.6
Benzo(b)fluoranthene	1.4	4.8	10	2.39	1.63	0.427	<0.081	1.22	0.0063	0.2	3.8
Benzo(g,h,i)perylene	2300	41000	32000	2.07	1.96	0.576	<0.081	1.32	0.001	0.19	2.7
Benzo(k)fluoranthene	15	52	25	1.67	1.36	0.354	<0.081	1.01	0.004	0.11	2.7
Chrysene	140	450	77	4.17	3.32	0.898	<0.4	2.73	0.004	0.14	3.1
Dibenzo(a,h)anthracene	0.1	0.5	30	0.854	0.408	0.111	<0.081	0.331	<0.0037	0.087	1.3
Fluoranthene	2900	48000	1200	13.2	9.8	2.37	<0.4	7.58	0.011	0.47	9.1
Indeno(1,2,3-cd)pyrene	1.5	5.3	28	1.88	1.7	0.454	<0.081	1.21	<0.0037	0.18	2.4
Phenanthrene	2000	30000	250	11.5	8.36	1.87	<0.4	6.95	0.0071	0.34	8.0
Pyrene	2200	37000	880	8.31	5.67	1.54	<0.4	4.7	0.0085	0.33	6.4

See notes at end of table.

Table 1-1 (Continued)
Summary of Fixed-Base Laboratory Soil Sample Results

Soil Excavation Plan, Tank Site 283
Naval Station Mayport
Mayport, Florida

Compound	Direct Exposure Residential ¹ (mg/kg)	Commercial/ Industrial (mg/kg)	Leachability Based Criteria ¹ (mg/kg)	SB-20	SB-21	SB-22	SB-23	SB-24	SB-25	SB-26	SB-27
				02/24/03	02/24/03	02/24/03	02/24/03	02/24/03	02/24/03	02/24/03	02/24/03
PAHs (USEPA Method 8310) (mg/kg)											
Naphthalene	40	270	1.7	<0.018	0.02	0.18	<0.0038	0.096	0.086	<0.036	<0.036
2-Methylnaphthalene	80	560	6.1	<0.018	0.02	0.14	<0.0038	0.096	0.071	<0.036	<0.036
1-Methylnaphthalene	68	470	2.2	<0.018	<0.018	0.088	<0.0038	0.080	<0.071	<0.036	<0.036
Acenaphthylene	1100	11000	27	<0.018	<0.018	<0.072	<0.0038	<0.073	<0.071	<0.036	<0.036
Acenaphthene	1900	18000	2.1	0.048	0.089	0.59	0.012	0.44	0.39	0.14	0.14
Anthracene	18000	260000	2500	0.096	0.17	0.77	0.019	0.82	0.86	0.32	0.31
Fluorene	2200	28000	160	0.048	0.094	0.66	0.01	0.40	0.43	0.14	0.15
Benzo(a)anthracene	1.4	5	3.2	0.19	0.23	1.4	0.049	1.30	1.00	0.48	0.47
Benzo(a)pyrene	0.1	0.5	8	0.32	0.33	1.9	0.076	2.00	1.40	0.67	0.68
Benzo(b)fluoranthene	1.4	4.8	10	0.4	0.36	2.6	0.095	2.70	1.70	0.82	0.98
Benzo(g,h,i)perylene	2300	41000	32000	0.3	0.3	1.6	0.091	1.70	1.30	0.66	0.59
Benzo(k)fluoranthene	15	52	25	0.26	0.33	1.4	0.06	1.80	1.00	0.62	0.40
Chrysene	140	450	77	0.27	0.31	1.8	0.064	1.80	1.20	0.59	0.58
Dibenzo(a,h)anthracene	0.1	0.5	30	0.12	0.13	0.72	0.037	0.73	0.45	0.25	0.22
Fluoranthene	2900	48000	1200	0.79	0.94	5.9	0.16	5.10	3.90	1.70	1.60
Indeno(1,2,3-cd)pyrene	1.5	5.3	28	0.27	0.28	1.4	0.079	1.60	1.10	0.58	0.53
Phenanthrene	2000	30000	250	0.62	0.83	5.9	0.11	4.20	3.60	1.30	1.30
Pyrene	2200	37000	880	0.54	0.67	4.0	0.12	3.60	2.60	1.20	1.10
See notes at end of table.											

Table 1-1 (Continued)
Summary of Fixed-Base Laboratory Soil Sample Results

Soil Excavation Plan, Tank Site 283
Naval Station Mayport
Mayport, Florida

Compound	Direct Exposure Residential ¹ (mg/kg)	Commercial/ Industrial (mg/kg)	Leachability Based Criteria ¹ (mg/kg)	SB-28	SB-28	SB-29	SB-30	SB-31	SB-32	SB-33	SB-34
				05/18/03	02/24/03	02/24/03	02/24/03	02/24/03	02/24/03	02/24/03	05/15/03
PAHs (USEPA Method 8310) (mg/kg)											
Naphthalene	40	270	1.7	<0.0034	0.82	<0.018	<0.0038	0.26	<0.0036	<0.0039	<0.0035
2-Methylnaphthalene	80	560	6.1	<0.0034	0.76	<0.018	<0.0038	0.24	<0.0036	<0.0039	<0.0035
1-Methylnaphthalene	68	470	2.2	<0.0034	0.50	<0.018	<0.0038	<0.18	<0.0036	<0.0039	<0.0035
Acenaphthylene	1100	11000	27	<0.0034	<0.18	<0.018	<0.0038	<0.18	<0.0036	<0.0039	<0.0035
Acenaphthene	1900	18000	2.1	0.0076	2.60	0.09	0.01	1.00	0.0072	<0.0039	<0.0035
Anthracene	18000	260000	2500	0.018	4.30	0.17	0.02	2.00	0.013	<0.0039	<0.0035
Fluorene	2200	28000	160	0.0072	2.80	0.09	0.01	1.00	0.0068	<0.0039	<0.0035
Benzo(a)anthracene	1.4	5	3.2	0.07	6.00	0.23	0.04	2.90	0.038	<0.0039	<0.0035
Benzo(a)pyrene	0.1	0.5	8	0.067	8.70	0.32	0.06	3.80	0.061	<0.0039	0.0077
Benzo(b)fluoranthene	1.4	4.8	10	0.079	9.80	0.40	0.08	4.90	0.078	<0.0039	<0.0035
Benzo(g,h,i)perylene	2300	41000	32000	0.041	6.00	0.30	0.06	3.40	0.066	<0.0039	<0.0035
Benzo(k)fluoranthene	15	52	25	0.048	5.40	2.30	0.05	3.60	0.063	<0.0039	<0.0035
Chrysene	140	450	77	0.067	7.10	2.80	0.05	3.30	0.05	<0.0039	<0.0035
Dibenzo(a,h)anthracene	0.1	0.5	30	<0.0034	3.00	0.06	0.02	1.40	0.027	<0.0039	<0.0035
Fluoranthene	2900	48000	1200	0.140	25.00	0.80	0.15	10.00	0.13	<0.0039	0.0038
Indeno(1,2,3-cd)pyrene	1.5	5.3	28	0.038	6.00	0.27	0.01	3.10	0.059	<0.0039	<0.0035
Phenanthrene	2000	30000	250	0.079	22.00	0.69	0.12	8.90	0.087	<0.0039	<0.0035
Pyrene	2200	37000	880	0.100	17.00	0.53	0.10	7.20	0.098	<0.0039	0.0035

See notes at end of table.

Soil Excavation Plan, Tank Site 283
Naval Station Mayport
Mayport, Florida

[illegible]

Soil Excavation Plan, Tank Site 283
Naval Station Mayport
Mayport, Florida

Compound	Direct Exposure Residential ¹ (mg/kg)	Commercial/ Industrial (mg/kg)	Leachability Based Criteria ¹ (mg/kg)	SB-38	SB-39	SB-39	SB-40	SB-41	SB-42	SB-43	SB-44
				05/15/03	05/15/03	05/15/03	01/14/04	01/14/04	01/14/04	01/14/04	03/22/04
PAHs (USEPA Method 8310) (mg/kg)											
Naphthalene	40	270	1.7	<0.0039	0.005	<0.0038	NA	NA	NA	NA	NA
2-Methylnaphthalene	80	560	6.1	<0.0039	0.005	<0.0038	NA	NA	NA	NA	NA
1-Methylnaphthalene	68	470	2.2	<0.0039	0.0037	<0.0038	NA	NA	NA	NA	NA
Acenaphthylene	1100	11000	27	<0.0039	0.004	0.0042	NA	NA	NA	NA	NA
Acenaphthene	1900	18000	2.1	<0.0039	0.0017	0.0014	NA	NA	NA	NA	NA
Anthracene	18000	260000	2500	<0.0039	0.026	0.03	NA	NA	NA	NA	NA
Fluorene	2200	28000	160	<0.0039	0.012	0.015	NA	NA	NA	NA	NA
Benzo(a)anthracene	1.4	5	3.2	<0.0039	0.099	0.085	0.95	1.6	9.8	<0.036	0.26
Benzo(a)pyrene	0.1	0.5	8	<0.0039	0.12	0.11	0.72	1.1	8	<0.036	0.2
Benzo(b)fluoranthene	1.4	4.8	10	<0.0039	0.2	0.14	0.86	1.2	10	<0.036	0.35
Benzo(g,h,i)perylene	2300	41000	32000	<0.0039	0.11	0.096	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	15	52	25	<0.0039	0.078	0.088	NA	NA	NA	NA	NA
Chrysene	140	450	77	<0.0039	0.11	0.098	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	0.1	0.5	30	<0.0039	<0.0034	<0.0038	0.26	0.12	2.2	<0.036	<0.036
Fluoranthene	2900	48000	1200	<0.0039	0.22	0.21	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	1.5	5.3	28	<0.0039	0.11	0.088	0.74	1.1	5.4	<0.036	0.087
Phenanthrene	2000	30000	250	<0.0039	0.18	0.17	NA	NA	NA	NA	NA
Pyrene	2200	37000	880	<0.0039	0.16	0.14	NA	NA	NA	NA	NA
See notes at end of table.											

Table 1-1 (Continued)
Summary of Fixed-Base Laboratory Soil Sample Results

Soil Excavation Plan, Tank Site 283
Naval Station Mayport
Mayport, Florida

Compound	Direct Exposure Residential ¹ (mg/kg)	Commercial/ Industrial (mg/kg)	Leachability Based Criteria ¹ (mg/kg)	SB-45	SB-46	SB-47	SB-48	SB-49
				03/22/04	03/22/04	03/22/04	03/22/04	03/22/04
PAHs (USEPA Method 8310) (mg/kg)								
Naphthalene	40	270	1.7	NA	NA	NA	NA	NA
2-Methylnaphthalene	80	560	6.1	NA	NA	NA	NA	NA
1-Methylnaphthalene	68	470	2.2	NA	NA	NA	NA	NA
Acenaphthylene	1100	11000	27	NA	NA	NA	NA	NA
Acenaphthene	1900	18000	2.1	NA	NA	NA	NA	NA
Anthracene	18000	260000	2500	NA	NA	NA	NA	NA
Fluorene	2200	28000	160	NA	NA	NA	NA	NA
Benzo(a)anthracene	1.4	5	3.2	0.091	<0.035	<0.036	<0.035	0.54
Benzo(a)pyrene	0.1	0.5	8	0.049	<0.035	<0.036	<0.035	0.5
Benzo(b)fluoranthene	1.4	4.8	10	0.1	<0.035	<0.036	<0.035	0.85
Benzo(g,h,i)perylene	2300	41000	32000	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	15	52	25	NA	NA	NA	NA	NA
Chrysene	140	450	77	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	0.1	0.5	30	<0.038	<0.035	<0.036	<0.035	0.1
Fluoranthene	2900	48000	1200	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	1.5	5.3	28	<0.038	<0.035	<0.036	<0.035	0.29
Phenanthrene	2000	30000	250	NA	NA	NA	NA	NA
Pyrene	2200	37000	880	NA	NA	NA	NA	NA

Notes:

¹Chapter 62-770, Florida Administrative Code (FAC) (April 30, 1999)

The quality control for this data has only been checked by the laboratory.

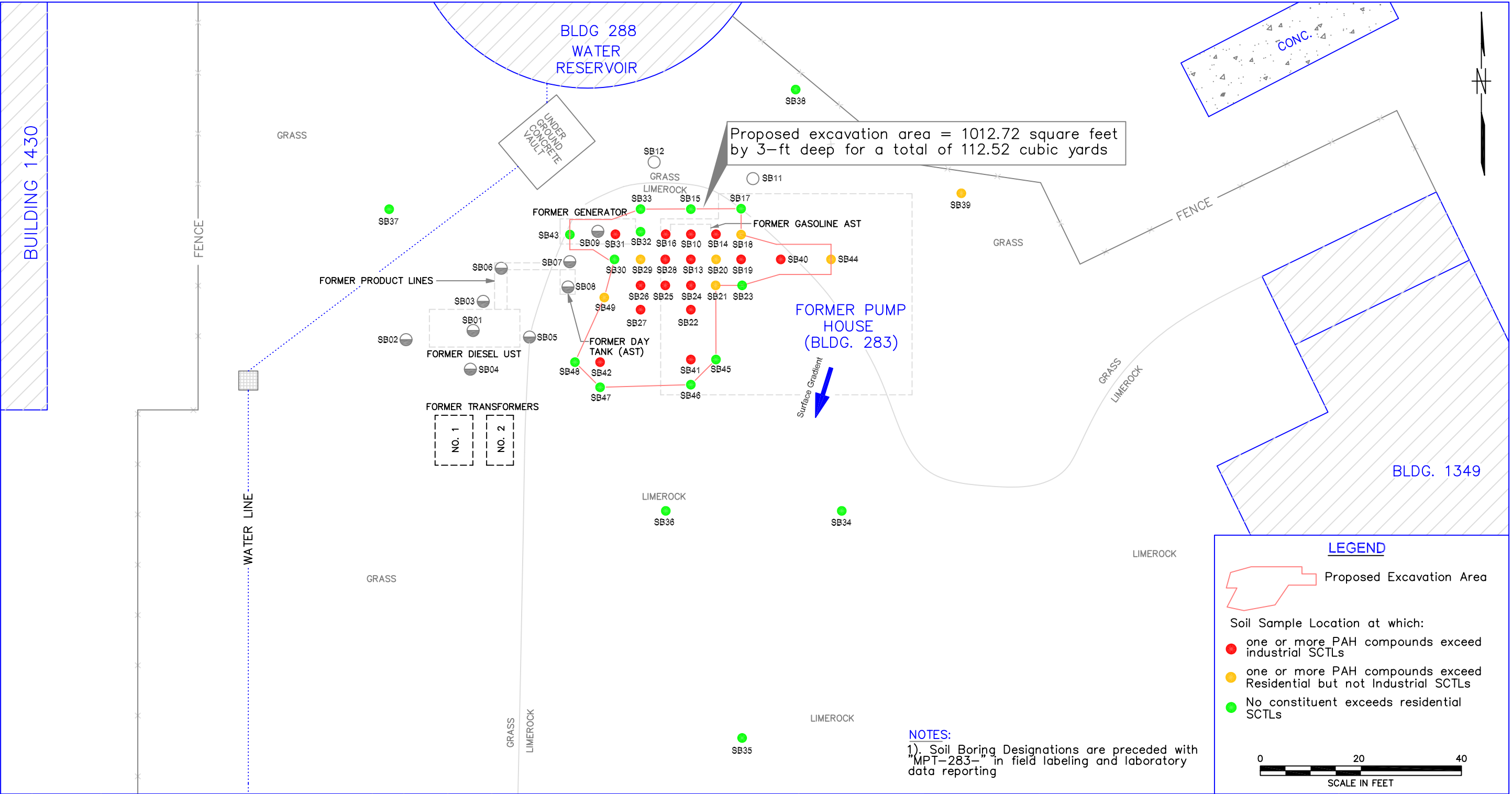
NA = not analyzed

Shaded = exceeds residential and/or leachability SCTLs

Bold = exceeds industrial/commercial SCTLs

All samples collected from 1ft or 3 ft bls.

mg/kg = milligrams per kilogram




NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES	DRAWN BY LLK	DATE 4/27/04		PROPOSED EXCAVATION AREA TANK SITE 283 SOIL CHARACTERIZATION AND EXCAVATION MONITORING PLAN NAVAL STATION MAYPORT MAYPORT, FLORIDA	CONTRACT NO. 4195	
							CHECKED BY	DATE			APPROVED BY	DATE
								COST/SCHED-AREA			APPROVED BY	DATE
								SCALE AS NOTED			DRAWING NO. FIGURE 1-3	REV. 0

Table 1-2
Soil Sample Locations Surveyed Coordinates

Soil Excavation Plan, Tank Site 283
Naval Station Mayport
Mayport, Florida

SOIL BORING	NORTHING	EASTING	LATITUDE	LONGITUDE
SB15	2201374.0114	526655.2395	30°23'17.82"	81°24'38.73"
SB17	2201374.3604	526665.2148	30°23'17.83"	81°24'38.61"
SB18	2201366.9452	526664.9302	30°23'17.75"	81°24'38.62"
SB21	2201355.6171	526661.2775	30°23'17.64"	81°24'38.66"
SB23	2201356.6233	526672.2816	30°23'17.65"	81°24'38.53"
SB30	2201360.1627	526641.6535	30°23'17.68"	81°24'38.88"
SB33	2201373.0867	526645.6999	30°23'17.81"	81°24'38.84"
SB43	2201367.7122	526630.2266	30°23'17.76"	81°24'39.01"
SB44	2201356.0535	526682.9615	30°23'17.65"	81°24'38.41"
SB45	2201342.3672	526663.0333	30°23'17.51"	81°24'38.64"
SB46	2201337.1217	526657.7729	30°23'17.46"	81°24'38.70"
SB47	2201336.1697	526640.2309	30°23'17.45"	81°24'38.90"
SB48	2201341.2623	526634.3516	30°23'17.50"	81°24'38.97"
SB49	2201351.4126	526638.3312	30°23'17.60"	81°24'38.92"

2.0 SOIL REMOVAL AND GROUNDWATER MONITORING PLAN

The objective of the soil and groundwater monitoring effort is to obtain site closure and entry of the site into NAVSTA Mayport's Land Use Control Implementation Plan. In order to achieve this objective, the following work tasks shall be implemented.

1. Pre-excavation Activities
2. Excavation
3. Backfill/Restoration
4. Soil Disposal
5. Documentation and Monitoring

The contractor shall be responsible for maintaining the work schedule agreed to by the United States Navy (Navy) and all documents required by the FDEP associated with this project. All personnel working on the base are required to abide by rules established by NAVSTA Mayport authorities. More detailed description of the above tasks and responsibilities of the contractor are presented below.

2.1 PRE-EXCAVATION ACTIVITIES

Prior to the excavation the following information, reports, and communications shall be completed by the subcontractor:

- The contractor shall oversee all aspects of work-site health and safety throughout the project. A Health and Safety Plan (HASP) documenting all site operations conducted at NAVSTA Mayport, Mayport, Florida shall be kept on site at all times. The HASP must comply with requirements stipulated in the Occupational Safety and Health Administration Standard 29 Code of Federal Regulations 1910.120. The site-specific HASP must be approved by the following Southern Division, Naval Facilities Engineering Command (NAVFAC EFD SOUTH) and the NAVSTA Mayport Environmental Department personnel and submitted no later than 30 days prior to beginning work.

Ms. Beverly Washington
NAVFAC EFD SOUTH
PO Box 190010
North Charleston, SC 29419-9010

Mr. Scott Dombrosky
Navy Public Works Center
Naval Air Station Jacksonville
Building 902, Box 30: Code320
NAS Jacksonville, FL 32212-0030

- An active garage maintained by Johnson Controls Hill is located on site. It is the contractor's responsibility to notify Johnson Controls Hill (phone number 904-270-6870) two weeks in advance of the beginning of the excavation work. It is common practice that Johnson Controls Hill stores material or equipment in the area of the excavation. It is also the contractor's responsibility to communicate with Johnson Controls Hill to remove all stored materials to a safe distance from the excavation site. The Johnson Controls Hill contact name(s) and time(s) of the conversation should be documented by the subcontractor. If Johnson Controls Hill is not notified, the work to be performed by the subcontractor may be slowed or stopped due to operations ongoing at the garage.
- Survey coordinates have been provided in this SCEMP. The contractor shall conduct a site survey to identify and flag the surveyed coordinates that designated the limits of the excavation.
- Prior to beginning the excavation, the contractor shall obtain a Dig Permit from the Public Works Engineering Division located at Building 1966. This permit process should be initiated no later than three weeks prior to beginning work. The dig permit requires the signatures of multiple personnel and multiple parties. Once the permit is obtained, it is required to remain on site throughout the project. A water main is known to be located along the western side of the property that connects NAVSTA Mayport with the potable water from the storage tank. If utilities are found during excavation activities, hand digging shall be used to remove soils within 3 ft of the located utility. No active utilities are anticipated to be within the excavation area.
- The contractor shall provide written documentation detailing which waste disposal facility and any subcontractors to be used. The soil will be taken to a licensed disposal facility.

2.2 EXCAVATION AND GROUNDWATER MONITORING ACTIVITIES

The contractor shall adhere to all excavation procedures including site control, posting of signs and cones, etc. according to the HASP. Tasks not addressed in the contractor's HASP must be pre-approved by the Mayport Environmental Department. The extent of the excavation has been defined using surveyed coordinates. A copy of the coordinates documenting the sample boring locations is presented in Table 1-2.

- The contractor shall be responsible for maintaining the schedule and documentation of all activities including the excavation. A daily log should include, but is not limited to, work performed, subcontractors, personnel, equipment, site conditions, and all health and safety related matters. Copies of the daily activities log shall be provided to the Navy upon completion of the project.
- One shallow monitoring well is located in the excavation pit. This well should remain intact during the excavation. The well is 13.5 ft deep and completed with 10 ft of screen. If the well is damaged, the subcontractor shall contact the Environmental Department at NAVSTA Mayport, and construction details for the well are provided in Appendix C. The installation of the replacement well shall be provided by the subcontractor at no cost to the Navy.
- No dewatering shall be required. Excavation is above the groundwater level.
- The excavated soils may be stockpiled and covered with heavy-duty polyethylene sheeting at the site. This shall be done in a manner to avoid the potential for contaminating surrounding soil or surface water. Alternately, soil may be stockpiled in properly lined and covered roll-off containers or drums or directly loaded onto trucks for transportation to the approved disposal facility.
- After excavation activities are complete, the contractor shall sample groundwater from monitoring well MPT-283-MW01 for the GAG/KAG analytical group as outlined in Chapter 62-770, FAC. The first event should be conducted immediately after construction/backfilling. This event will be considered the first of four quarterly sampling events. The contractor shall be responsible for subsequent sampling events conducted once per quarter until four events are completed or until two consecutive events indicate non-detect results.

2.3 BACKFILL/SITE RESTORATION

The site shall be backfilled with comparable material as was removed. The backfill shall be void of vegetation and manmade materials. If such materials are found to be in the backfill, the undesirable backfill will be removed and replaced at the subcontractor's expense. All fill material used should be obtained from an uncontaminated source. The materials shall be certified as clean or tested by the excavation contractor to ensure the material is suitable for use as backfill prior to being brought onto the site. The soil shall be tamped or tracked in with equipment to assist with compaction. The original lime rock used to cover the site can be saved for reuse. A minimum of 6 inches of lime rock is required to cover the excavation area. Compaction shall be completed with a sheep's foot or similar device.

2.4 DISPOSAL

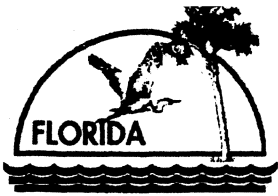
The soils will be properly disposed of according to waste characterization activities. A disposal analysis has been collected for total recoverable petroleum hydrocarbons using the Florida Petroleum Range Organics Method, PAHs using USEPA Method 8270, volatile organic aromatics using USEPA Method 8260, and metals (arsenic, cadmium, chromium, and lead) using USEPA Method 6010. Copies of the disposal sample analytical results can be provided upon request. The soil is classified as non-hazardous. The impacted soil must not remain on site longer than two days after its excavation and will be manifested for disposal at a licensed facility. The subcontractor shall have personnel from the Environmental Department at NAVSTA Mayport sign the manifests as the generator.

2.5 DOCUMENTATION

Once the excavation is complete, the subcontractor shall prepare a Source Removal Report (SRR) documenting all remedial action activities including the first round of groundwater monitoring. The SRR shall contain all elements required by the FDEP to obtain site closure including date, time, description of work completed, photographs, figures, tables, analytical results, soil disposal manifests, and clean fill certification. The SRR shall also indicate the land use controls to be implemented at the site. The SRR shall be submitted to Ms. Beverly Washington, NAVFAC EFD SOUTH, and Mr. Scott Dombrosky, Navy Public Works Center Jacksonville, in draft form for approval. After Navy approval is obtained, the SRR shall be issued to the FDEP for regulatory approval.

After each subsequent quarterly monitoring event, the contractor shall prepare a brief letter report documenting the results from the well sampling event. The report shall be submitted to the Navy in draft form and, following Navy approval, the report will be issued to the FDEP. If no constituents are detected after the third and fourth quarter monitoring events, the contractor shall recommend no further action (NFA) and obtain FDEP concurrence prior to the next monitoring event. If constituents are detected, but remain below groundwater cleanup target levels, the contractor will recommend NFA. The four quarters of monitoring will begin once the FDEP has approved the monitoring plan in the Closure Report. A Monitoring Only Plan shall be sealed by a registered Professional Geologist or Professional Engineer.

APPENDIX A
FDEP SAR APPROVAL LETTER



Jeb Bush
Governor

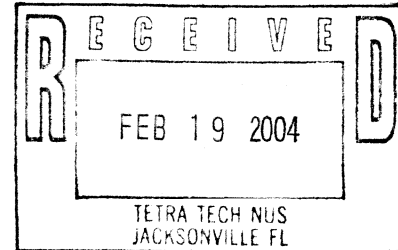
Department of Environmental Protection

DN4195:2.1:03

Twin Towers Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

David B. Struhs
Secretary

February 13, 2004



Ms. Beverly Washington
Department of the Navy, Petroleum Program
Southern Division - Naval Facilities Engineering Command
P.O. Box 190010
2155 Eagle Drive
North Charleston, SC 29419-9010

file: 283SAR1203.doc

RE: Site Assessment Report for Tank Site 283; Naval Station Mayport, Mayport, FL

Dear Ms. Washington:

I have reviewed the above document dated December 2003 (received December 19, 2003). Information furnished in the document confirms that the requirements of Chapter 62-600, F.A.C. have been met. Please prepare a Remedial Action Plan for the contaminated soil at the site.

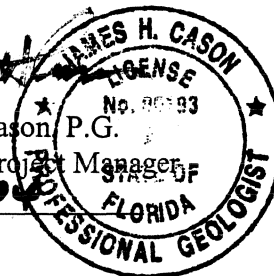
If further clarification is required or if you have any questions, please contact me at 850-245-8999.

Sincerely,

James H. Cason, P.G.

Remedial Project Manager

date



cc: Mark Peterson, Tetra Tech NUS, Tallahassee
Diane Lancaster, NAVSTA Mayport

JJC *[Signature]* ESN *[Signature]*

"Protect, Conserve and Manage Florida's Environment and Natural Resources"

Printed on recycled paper.

Correspondence
CJD 230

APPENDIX B
ANALYTICAL DATA

Sample Summary

Tetra Tech, NUS

Job No: F13797

NAS Mayport-CTO230

Project No: N4195-P2293(SD), Tank 283

Sample Number	Collected Date	Time By	Received	Matrix Code Type	Client Sample ID
F13797-1	07/10/02	08:15 MD	07/11/02	SO Soil	MPT-283-SB10-03

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Report of Analysis

Client Sample ID:	MPT-283-SB10-03	Date Sampled:	07/10/02
Lab Sample ID:	F13797-1	Date Received:	07/11/02
Matrix:	SO - Soil	Percent Solids:	87.4
Method:	SW846 8260B		
Project:	NAS Mayport-CTO230		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	G0017164.D	1	07/18/02	KW	n/a	n/a	VG558
Run #2							

	Initial Weight
Run #1	4.93 g
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	5.8	ug/kg	
108-88-3	Toluene	ND	5.8	ug/kg	
100-41-4	Ethylbenzene	ND	5.8	ug/kg	
1330-20-7	Xylene (total)	ND	17	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	5.8	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		75-125%
2037-26-5	Toluene-D8	102%		75-125%
460-00-4	4-Bromofluorobenzene	113%		72-137%
17060-07-0	1,2-Dichloroethane-D4	116%		68-125%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID: MPT-283-SB10-03
 Lab Sample ID: F13797-1
 Matrix: SO - Soil
 Method: EPA 8310 SW846 3550B
 Project: NAS Mayport-CTO230

Date Sampled: 07/10/02
 Date Received: 07/11/02
 Percent Solids: 87.4

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	AA011338.D	5	07/18/02	MRE	07/16/02	OP5492	CAA526
Run #2							

	Initial Weight	Final Volume
Run #1	30.0 g	5.0 ml
Run #2		

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	Units	Q
83-32-9	Acenaphthene	ND	3800	ug/kg	
208-96-8	Acenaphthylene	ND	3800	ug/kg	
120-12-7	Anthracene	1740	1900	ug/kg	J
56-55-3	Benzo(a)anthracene	3400	1900	ug/kg	
50-32-8	Benzo(a)pyrene	3370	380	ug/kg	
205-99-2	Benzo(b)fluoranthene	2390	380	ug/kg	
191-24-2	Benzo(g,h,i)perylene	2070	380	ug/kg	
207-08-9	Benzo(k)fluoranthene	1670	380	ug/kg	
218-01-9	Chrysene	4170	1900	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	854	380	ug/kg	
206-44-0	Fluoranthene	13200	1900	ug/kg	
86-73-7	Fluorene	ND	1900	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	1880	380	ug/kg	
91-20-3	Naphthalene	ND	1900	ug/kg	
90-12-0	1-Methylnaphthalene	ND	1900	ug/kg	
91-57-6	2-Methylnaphthalene	ND	1900	ug/kg	
85-01-8	Phenanthrene	11500	1900	ug/kg	
129-00-0	Pyrene	8310	1900	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	66%		37-158%
92-94-4	p-Terphenyl	151% ^b		59-149%

(a) All hits confirmed by spectral match using a diode array detector.

(b) Outside control limits due to matrix interference.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID: MPT-283-SB10-03

Lab Sample ID: F13797-1

Date Sampled: 07/10/02

Matrix: SO - Soil

Date Received: 07/11/02

Method: FLORIDA-PRO SW846 3550B

Percent Solids: 87.4

Project: NAS Mayport-CTO230

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP22270.D	1	07/23/02	SKW	07/22/02	OP5525	GOP809
Run #2							

	Initial Weight	Final Volume
Run #1	30.1 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
---------	----------	--------	----	-------	---

	TPH (C8-C40)	56.9	9.5	mg/kg	
--	--------------	------	-----	-------	--

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
---------	----------------------	--------	--------	--------

84-15-1	o-Terphenyl	96%		66-130%
---------	-------------	-----	--	---------

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

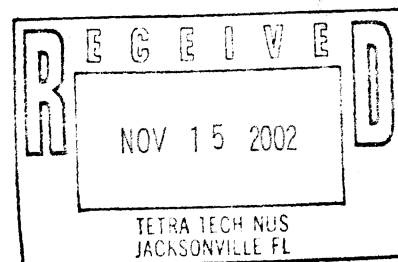
N = Indicates presumptive evidence of a compound



Tetra Tech NUS

INTERNAL CORRESPONDENCE

TO: M. PETERSON **DATE:** NOVEMBER 13, 2002
FROM: SETH C. STAFFEN **COPIES:** DV FILE
SUBJECT: ORGANIC DATA VALIDATION – PAH
CTO 230, NS MAYPORT
SDG: F14900
SAMPLES: 1/AQUEOUS/PAH
MPT-283-EQ BLK
4/SOIL BORINGS/PAH
MPT-283-SB-13-SO-3 MPT-283-SB-14-SO-3
MPT-283-SB-15-SO-3 MPT-283-SB-16-SO-3



OVERVIEW

The sample set for CTO 230, SDG F14900; Naval Station (NS) Mayport consists of one (1) equipment blank and four (4) soil boring environmental samples. The samples were analyzed for select polynuclear aromatic hydrocarbons: benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene. No field duplicate pairs were included in this SDG.

The samples were collected on October 03, 2002 by Tetra Tech NUS, Inc. and analyzed by Accutest Laboratories. All analyses were performed in accordance with Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria and analyzed according to SW 846 Method 8310 analytical and reporting protocol. The data in this SDG was validated with regard to the following parameters:

- * • Data Completeness
- * • Holding Times
- Initial/Continuing Calibrations
- * • Laboratory Method and Field Quality Control Blank Results
- Detection Limits

The symbol (*) indicates that all quality control criteria were met for this parameter. Problems affecting data quality are discussed below; documentation supporting these findings is presented in Appendix C. Qualified analytical results are presented in Appendix A.

PAH FRACTION

The initial calibration on 10/17/02 contained a relative response factor (RRF) that exceeded the 30% quality control limit for anthracene. No qualification action was taken because the other column was compliant.

MEMO TO: M. PETERSON
DATE: 11/13/02 – PAGE 2

ADDITIONAL COMMENTS

Positive results < Reporting Limit (RL) were qualified as estimated, J, due to uncertainty near the detection limit.

EXECUTIVE SUMMARY

Laboratory Performance: Initial calibration criteria was not met for anthracene.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the EPA Functional Guidelines for Organic Data Validation (October 1999) and the NFESC guidelines "Navy IRCDQM" (September 1999). The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC guidelines and the Quality Assurance Project Plan (QAPP)."


Seth C. Staffen

Environmental Scientist/Data Validator
Tetra Tech NUS


Joseph A. Samchuck

Data Validation Quality Assurance Officer
TetraTech NUS

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

Qualifier Codes:

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration (i.e., % RSDs, %Ds, ICVs, CCVs, RPDs, RRFs, etc.) Noncompliance
- D = MS/MSD Noncompliance
- E = LCS/LCSD Noncompliance
- F = Lab Duplicate Imprecision
- G = Field Duplicate Imprecision
- H = Holding Time Exceedance
- I = ICP Serial Dilution Noncompliance
- J = GFAA PDS - GFAA MSA's $r < 0.995$
- K = ICP Interference - include ICSAB % R's
- L = Instrument Calibration Range Exceedance
- M = Sample Preservation
- N = Internal Standard Noncompliance
- N01 = Internal Standard Noncompliance Dioxins
- N02 = Recovery Standard Noncompliance Dioxins
- N03 = Clean-up Standard Noncompliance Dioxins
- O = Poor Instrument Performance (i.e., base-time drifting)
- P = Uncertainty near detection limit ($< 2 \times \text{IDL}$ for inorganics and $< \text{CRQL}$ for organics)
- Q = Other problems (can encompass a number of issues)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = Pest/PCD% between columns for positive results
- V = Non-linear calibrations, tuning $r < 0.995$ (correlation coefficient)
- W = EMPC result
- X = Signal to noise response drop
- Y = Percent solids $< 30\%$
- Z = Uncertainty at 2 sigma deviation is less than sample activity

PROJ_NO: 4195

SDG: F14900 MEDIA: SOIL DATA FRACTION: PAH

nsample MPT-283-SB-13-SO-3
samp_date 10/3/2002
lab_id F14900-1
qc_type NM
units UG/KG
Pct_Solids 85.3
DUP_OF:

Parameter	Result	Val Qual	Qual Code
BENZO(A)ANTHRACENE	3990		
BENZO(A)PYRENE	2340		
BENZO(B)FLUORANTHENE	1630		
DIBENZO(A,H)ANTHRACENE	408		
INDENO(1,2,3-CD)PYRENE	1700		

nsample MPT-283-SB-14-SO-3
samp_date 10/3/2002
lab_id F14900-2
qc_type NM
units UG/KG
Pct_Solids 80.4
DUP_OF:

Parameter	Result	Val Qual	Qual Code
BENZO(A)ANTHRACENE	918		
BENZO(A)PYRENE	626		
BENZO(B)FLUORANTHENE	427		
DIBENZO(A,H)ANTHRACENE	111		
INDENO(1,2,3-CD)PYRENE	454		

nsample MPT-283-SB-15-SO-3
samp_date 10/3/2002
lab_id F14900-3
qc_type NM
units UG/KG
Pct_Solids 84.4
DUP_OF:

Parameter	Result	Val Qual	Qual Code
BENZO(A)ANTHRACENE	400	U	
BENZO(A)PYRENE	81	U	
BENZO(B)FLUORANTHENE	81	U	
DIBENZO(A,H)ANTHRACENE	81	U	
INDENO(1,2,3-CD)PYRENE	81	U	

PROJ_NO: 4195

SDG: F14900 MEDIA: SOIL DATA FRACTION: PAH

nsample MPT-283-SB-16-SO-3
samp_date 10/3/2002
lab_id F14900-4
qc_type NM
units UG/KG
Pct_Solids 81.3
DUP_OF:

Parameter	Result	Val Qual	Qual Code
BENZO(A)ANTHRACENE	3010		
BENZO(A)PYRENE	1780		
BENZO(B)FLUORANTHENE	1220		
DIBENZO(A,H)ANTHRACENE	331	J	P
INDENO(1,2,3-CD)PYRENE	1210		

PROJ_NO: 4195

SDG: F14900 MEDIA: WATER DATA FRACTION: PAH

nsample MPT-283-EQ BLK
samp_date 10/3/2002
lab_id F14900-5
qc_type NM
units UG/L
Pct_Solids 0
DUP_OF:

Parameter	Result	Val Qual	Qual Code
BENZO(A)ANTHRACENE	0.21	U	
BENZO(A)PYRENE	0.21	U	
BENZO(B)FLUORANTHENE	0.21	U	
DIBENZO(A,H)ANTHRACENE	0.21	U	
INDENO(1,2,3-CD)PYRENE	0.21	U	

ENCO LABORATORIES

REPORT # : JAX30002
 DATE REPORTED: March 7, 2003
 REFERENCE : N4195
 PROJECT NAME : CTO 230 Tank 283

PAGE 2 OF 12

RESULTS OF ANALYSIS

EPA METHOD 8270 -
 PAH Compounds by SIM

	MPT-283-SB-17	MPT-283-SB-18	Units
Naphthalene	3.7 U	11	ug/Kg
2-Methylnaphthalene	3.7 U	10	ug/Kg
1-Methylnaphthalene	3.7 U	7.7	ug/Kg
Acenaphthylene	3.7 U	3.7 U	ug/Kg
Acenaphthene	3.7 U	34	ug/Kg
Fluorene	3.7 U	32	ug/Kg
Phenanthrene	7.1	340	ug/Kg
Anthracene	3.7 U	51	ug/Kg
Fluoranthene	11	470	ug/Kg
Pyrene	8.5	330	ug/Kg
Chrysene	4.0	140	ug/Kg
Benzo(a)anthracene	3.7	110	ug/Kg
Benzo(b)fluoranthene	6.3	200	ug/Kg
Benzo(k)fluoranthene	4.0	110	ug/Kg
Benzo(a)pyrene	6.0	170	ug/Kg
Indeno(1,2,3-cd)pyrene	3.7 U	180	ug/Kg
Dibenzo(a,h)anthracene	3.7 U	87	ug/Kg
Benzo(g,h,i)perylene	10	190	ug/Kg

Surrogate:	% RECOV	% RECOV	LIMITS
p-Terphenyl	54	65	19-162
Date Prepared	02/26/03	02/26/03	
Date Analyzed	03/04/03 10:52	03/04/03 11:13	

MISCELLANEOUS	METHOD	MPT-283-SB-17	MPT-283-SB-18	Units
Percent Solids	SM2540G	89	90	%
Date Analyzed		02/25/03 12:00	02/25/03 12:00	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES

REPORT # : JAX30002
 DATE REPORTED: March 7, 2003
 REFERENCE : N4195
 PROJECT NAME : CTO 230 Tank 283

PAGE 3 OF 12

RESULTS OF ANALYSIS

EPA METHOD 8270 - PAH Compounds by SIM	MPT-283-SB-19		MPT-283-SB-20		Units
Naphthalene	200	D1	18 U	D2	ug/Kg
2-Methylnaphthalene	190	D1	18 U	D2	ug/Kg
1-Methylnaphthalene	140	D1	18 U	D2	ug/Kg
Acenaphthylene	73 U	D1	18 U	D2	ug/Kg
Acenaphthene	840	D1	48	D2	ug/Kg
Fluorene	840	D1	48	D2	ug/Kg
Phenanthrene	8000	D1	620	D2	ug/Kg
Anthracene	1400	D1	96	D2	ug/Kg
Fluoranthene	9100	D1	790	D2	ug/Kg
Pyrene	6400	D1	540	D2	ug/Kg
Chrysene	3100	D1	270	D2	ug/Kg
Benzo(a)anthracene	2400	D1	190	D2	ug/Kg
Benzo(b)fluoranthene	3800	D1	400	D2	ug/Kg
Benzo(k)fluoranthene	2700	D1	260	D2	ug/Kg
Benzo(a)pyrene	3600	D1	320	D2	ug/Kg
Indeno(1,2,3-cd)pyrene	2400	D1	270	D2	ug/Kg
Dibenzo(a,h)anthracene	1300	D1	120	D2	ug/Kg
Benzo(g,h,i)perylene	2700	D1	300	D2	ug/Kg
<u>Surrogate:</u>	<u>% RECOV</u>		<u>% RECOV</u>		<u>LIMITS</u>
p-Terphenyl	*		*		19-162
Date Prepared	02/26/03		02/26/03		
Date Analyzed	03/04/03 18:14		03/04/03 18:36		

MISCELLANEOUS	METHOD	MPT-283-SB-19	MPT-283-SB-20	Units
Percent Solids	SM2540G	90	89	%
Date Analyzed		02/25/03 12:00	02/25/03 12:00	

* = Surrogate recovery unavailable due to sample dilution.
 U = Compound was analyzed for but not detected to the level shown.
 D1 = Analyte value determined from a 1:20 dilution.
 D2 = Analyte value determined from a 1:5 dilution.

ENCO LABORATORIES

REPORT # : JAX30002
 DATE REPORTED: March 7, 2003
 REFERENCE : N4195
 PROJECT NAME : CTO 230 Tank 283

PAGE 4 OF 12

RESULTS OF ANALYSIS

EPA METHOD 8270 -
 PAH Compounds by SIM

	<u>MPT-283-SB-21</u>		<u>MPT-283-SB-22</u>		<u>Units</u>
Naphthalene	20	D2	180	D1	ug/Kg
2-Methylnaphthalene	20	D2	140	D1	ug/Kg
1-Methylnaphthalene	18 U	D2	88	D1	ug/Kg
Acenaphthylene	18 U	D2	72 U	D1	ug/Kg
Acenaphthene	89	D2	590	D1	ug/Kg
Fluorene	94	D2	660	D1	ug/Kg
Phenanthrene	830	D2	5900	D1	ug/Kg
Anthracene	170	D2	770	D1	ug/Kg
Fluoranthene	940	D2	5900	D1	ug/Kg
Pyrene	670	D2	4000	D1	ug/Kg
Chrysene	310	D2	1800	D1	ug/Kg
Benzo(a)anthracene	230	D2	1400	D1	ug/Kg
Benzo(b)fluoranthene	360	D2	2600	D1	ug/Kg
Benzo(k)fluoranthene	330	D2	1400	D1	ug/Kg
Benzo(a)pyrene	330	D2	1900	D1	ug/Kg
Indeno(1,2,3-cd)pyrene	280	D2	1400	D1	ug/Kg
Dibenzo(a,h)anthracene	130	D2	720	D1	ug/Kg
Benzo(g,h,i)perylene	300	D2	1600	D1	ug/Kg

<u>Surrogate:</u>	<u>% RECOV</u>	<u>% RECOV</u>	<u>LIMITS</u>
p-Terphenyl	*	*	19-162
Date Prepared	02/26/03	02/26/03	
Date Analyzed	03/04/03 18:58	03/04/03 19:19	

<u>MISCELLANEOUS</u>	<u>METHOD</u>	<u>MPT-283-SB-21</u>	<u>MPT-283-SB-22</u>	<u>Units</u>
Percent Solids	SM2540G	90	91	%
Date Analyzed		02/25/03 12:00	02/25/03 12:00	

* = Surrogate recovery unavailable due to sample dilution.
 U = Compound was analyzed for but not detected to the level shown.
 D1 = Analyte value determined from a 1:20 dilution.
 D2 = Analyte value determined from a 1:5 dilution.

ENCO LABORATORIES

REPORT # : JAX30002
 DATE REPORTED: March 7, 2003
 REFERENCE : N4195
 PROJECT NAME : CTO 230 Tank 283

PAGE 5 OF 12

RESULTS OF ANALYSIS

<u>EPA METHOD 8270 -</u> <u>PAH Compounds by SIM</u>	<u>MPT-283-SB-23</u>	<u>MPT-283-SB-24</u>	<u>Units</u>
Naphthalene	3.8 U	96 D1	ug/Kg
2-Methylnaphthalene	3.8 U	96 D1	ug/Kg
1-Methylnaphthalene	3.8 U	80 D1	ug/Kg
Acenaphthylene	3.8 U	73 U D1	ug/Kg
Acenaphthene	12	440 D1	ug/Kg
Fluorene	10	400 D1	ug/Kg
Phenanthrene	110	4200 D1	ug/Kg
Anthracene	19	820 D1	ug/Kg
Fluoranthene	160	5100 D1	ug/Kg
Pyrene	120	3600 D1	ug/Kg
Chrysene	64	1800 D1	ug/Kg
Benzo(a)anthracene	49	1300 D1	ug/Kg
Benzo(b)fluoranthene	95	2700 D1	ug/Kg
Benzo(k)fluoranthene	60	1800 D1	ug/Kg
Benzo(a)pyrene	76	2000 D1	ug/Kg
Indeno(1,2,3-cd)pyrene	79	1600 D1	ug/Kg
Dibenzo(a,h)anthracene	37	730 D1	ug/Kg
Benzo(g,h,i)perylene	91	1700 D1	ug/Kg
<u>Surrogate:</u>	<u>% RECOV</u>	<u>% RECOV</u>	<u>LIMITS</u>
p-Terphenyl	57	*	19-162
Date Prepared	02/26/03	02/26/03	
Date Analyzed	03/04/03 13:02	03/04/03 19:41	

<u>MISCELLANEOUS</u>	<u>METHOD</u>	<u>MPT-283-SB-23</u>	<u>MPT-283-SB-24</u>	<u>Units</u>
Percent Solids	SM2540G	86	90	%
Date Analyzed		02/25/03 12:00	02/25/03 12:00	

* = Surrogate recovery unavailable due to sample dilution.
 U = Compound was analyzed for but not detected to the level shown.
 D1 = Analyte value determined from a 1:20 dilution.

ENCO LABORATORIES

REPORT # : JAX30002

DATE REPORTED: March 7, 2003

REFERENCE : N4195

PROJECT NAME : CTO 230 Tank 283

PAGE 6 OF 12

RESULTS OF ANALYSIS

EPA METHOD 8270 -

PAH Compounds by SIM

	MPT-283-SB-25		MPT-283-SB-26		Units
Naphthalene	86	D1	36 U	D3	ug/Kg
2-Methylnaphthalene	71	D1	36 U	D3	ug/Kg
1-Methylnaphthalene	71 U	D1	36 U	D3	ug/Kg
Acenaphthylene	71 U	D1	36 U	D3	ug/Kg
Acenaphthene	390	D1	140	D3	ug/Kg
Fluorene	430	D1	140	D3	ug/Kg
Phenanthrene	3600	D1	1300	D3	ug/Kg
Anthracene	860	D1	320	D3	ug/Kg
Fluoranthene	3900	D1	1700	D3	ug/Kg
Pyrene	2600	D1	1200	D3	ug/Kg
Chrysene	1200	D1	590	D3	ug/Kg
Benzo(a)anthracene	1000	D1	480	D3	ug/Kg
Benzo(b)fluoranthene	1700	D1	820	D3	ug/Kg
Benzo(k)fluoranthene	1000	D1	620	D3	ug/Kg
Benzo(a)pyrene	1400	D1	670	D3	ug/Kg
Indeno(1,2,3-cd)pyrene	1100	D1	580	D3	ug/Kg
Dibenzo(a,h)anthracene	450	D1	250	D3	ug/Kg
Benzo(g,h,i)perylene	1300	D1	660	D3	ug/Kg

Surrogate:

	% RECOV	% RECOV	LIMITS
p-Terphenyl	*	*	19-162
Date Prepared	02/26/03	02/26/03	
Date Analyzed	03/04/03 20:02	03/04/03 20:24	

MISCELLANEOUS	METHOD	MPT-283-SB-25	MPT-283-SB-26	Units
Percent Solids	SM2540G	93	92	%
Date Analyzed		02/25/03 12:00	02/25/03 12:00	

* = Surrogate recovery unavailable due to sample dilution.

U = Compound was analyzed for but not detected to the level shown.

D1 = Analyte value determined from a 1:20 dilution.

D3 = Analyte value determined from a 1:10 dilution.

ENCO LABORATORIES

REPORT # : JAX30002
 DATE REPORTED: March 7, 2003
 REFERENCE : N4195
 PROJECT NAME : CTO 230 Tank 283

PAGE 7 OF 12

RESULTS OF ANALYSIS

EPA METHOD 8270 -

PAH Compounds by SIM

	MPT-283-SB-27		MPT-283-SB-28		Units
Naphthalene	36	U D3	820	D4	ug/Kg
2-Methylnaphthalene	36	U D3	760	D4	ug/Kg
1-Methylnaphthalene	36	U D3	500	D4	ug/Kg
Acenaphthylene	36	U D3	180	U D4	ug/Kg
Acenaphthene	140	D3	2600	D4	ug/Kg
Fluorene	150	D3	2800	D4	ug/Kg
Phenanthrene	1300	D3	22000	D4	ug/Kg
Anthracene	310	D3	4300	D4	ug/Kg
Fluoranthene	1600	D3	25000	D4	ug/Kg
Pyrene	1100	D3	17000	D4	ug/Kg
Chrysene	580	D3	7100	D4	ug/Kg
Benzo(a) anthracene	470	D3	6000	D4	ug/Kg
Benzo(b) fluoranthene	980	D3	9800	D4	ug/Kg
Benzo(k) fluoranthene	400	D3	5400	D4	ug/Kg
Benzo(a) pyrene	680	D3	8700	D4	ug/Kg
Indeno(1,2,3-cd) pyrene	530	D3	6000	D4	ug/Kg
Dibenzo(a,h) anthracene	220	D3	3000	D4	ug/Kg
Benzo(g,h,i) perylene	590	D3	6000	D4	ug/Kg

Surrogate:

	% RECOV	% RECOV	LIMITS
p-Terphenyl	*	*	19-162
Date Prepared	02/26/03	02/26/03	
Date Analyzed	03/04/03 20:46	03/04/03 21:07	

MISCELLANEOUS	METHOD	MPT-283-SB-27	MPT-283-SB-28	Units
Percent Solids	SM2540G	91	92	%
Date Analyzed		02/25/03 12:00	02/25/03 12:00	

* = Surrogate recovery unavailable due to sample dilution.
 U = Compound was analyzed for but not detected to the level shown.
 D3 = Analyte value determined from a 1:10 dilution.
 D4 = Analyte value determined from a 1:50 dilution.

ENCO LABORATORIES

REPORT # : JAX30002
 DATE REPORTED: March 7, 2003
 REFERENCE : N4195
 PROJECT NAME : CTO 230 Tank 283

PAGE 8 OF 12

RESULTS OF ANALYSIS

EPA METHOD 8270 - PAH Compounds by SIM	MPT-283-SB-29	MPT-283-SB-30	Units
Naphthalene	18 U D2	3.8 U	ug/Kg
2-Methylnaphthalene	18 U D2	3.8 U	ug/Kg
1-Methylnaphthalene	18 U D2	3.8 U	ug/Kg
Acenaphthylene	18 U D2	3.8 U	ug/Kg
Acenaphthene	90 D2	11	ug/Kg
Fluorene	90 D2	10	ug/Kg
Phenanthrene	690 D2	120	ug/Kg
Anthracene	170 D2	16	ug/Kg
Fluoranthene	800 D2	150	ug/Kg
Pyrene	530 D2	100	ug/Kg
Chrysene	280 D2	50	ug/Kg
Benzo(a)anthracene	230 D2	39	ug/Kg
Benzo(b)fluoranthene	400 D2	77	ug/Kg
Benzo(k)fluoranthene	230 D2	54	ug/Kg
Benzo(a)pyrene	320 D2	58	ug/Kg
Indeno(1,2,3-cd)pyrene	270 D2	6.4	ug/Kg
Dibenzo(a,h)anthracene	64 D2	24	ug/Kg
Benzo(g,h,i)perylene	300 D2	60	ug/Kg
Surrogate:	% RECOV	% RECOV	LIMITS
p-Terphenyl	*	60	19-162
Date Prepared	02/26/03	02/26/03	
Date Analyzed	03/04/03 21:29	03/04/03 15:34	

MISCELLANEOUS	METHOD	MPT-283-SB-29	MPT-283-SB-30	Units
Percent Solids	SM2540G	94	88	%
Date Analyzed		02/25/03 12:00	02/25/03 12:00	

* = Surrogate recovery unavailable due to sample dilution.
 U = Compound was analyzed for but not detected to the level shown.
 D2 = Analyte value determined from a 1:5 dilution.

ENCO LABORATORIES

REPORT # : JAX30002
 DATE REPORTED: March 7, 2003
 REFERENCE : N4195
 PROJECT NAME : CTO 230 Tank 283

PAGE 9 OF 12

RESULTS OF ANALYSIS

EPA METHOD 8270 -

PAH Compounds by SIM

	MPT-283-SB-31		MPT-283-SB-32	Units
Naphthalene	260	D4	3.6 U	ug/Kg
2-Methylnaphthalene	240	D4	3.6 U	ug/Kg
1-Methylnaphthalene	180 U	D4	3.6 U	ug/Kg
Acenaphthylene	180 U	D4	3.6 U	ug/Kg
Acenaphthene	1000	D4	7.2	ug/Kg
Fluorene	1000	D4	6.8	ug/Kg
Phenanthrene	8900	D4	87	ug/Kg
Anthracene	2000	D4	13	ug/Kg
Fluoranthene	10000	D4	130	ug/Kg
Pyrene	7200	D4	98	ug/Kg
Chrysene	3300	D4	50	ug/Kg
Benzo(a)anthracene	2900	D4	38	ug/Kg
Benzo(b)fluoranthene	4900	D4	78	ug/Kg
Benzo(k)fluoranthene	3600	D4	63	ug/Kg
Benzo(a)pyrene	3800	D4	61	ug/Kg
Indeno(1,2,3-cd)pyrene	3100	D4	59	ug/Kg
Dibenzo(a,h)anthracene	1400	D4	27	ug/Kg
Benzo(g,h,i)perylene	3400	D4	66	ug/Kg

Surrogate:

	% RECOV	% RECOV	LIMITS
p-Terphenyl	*	57	19-162
Date Prepared	02/26/03	02/26/03	
Date Analyzed	03/04/03 21:51	03/04/03 16:17	

MISCELLANEOUS	METHOD	MPT-283-SB-31	MPT-283-SB-32	Units
Percent Solids	SM2540G	90	92	%
Date Analyzed		02/25/03 12:00	02/25/03 12:00	

* = Surrogate recovery unavailable due to sample dilution.
 U = Compound was analyzed for but not detected to the level shown.
 D4 = Analyte value determined from a 1:50 dilution.

ENCO LABORATORIES

REPORT # : JAX30002

DATE REPORTED: March 7, 2003

REFERENCE : N4195

PROJECT NAME : CTO 230 Tank 283

PAGE 10 OF 12

RESULTS OF ANALYSIS

EPA METHOD 8270 -

PAH Compounds by SIM

MPT-283-SB-33

LAB BLANK

Units

Naphthalene	3.9 U	3.3 U	ug/Kg
2-Methylnaphthalene	3.9 U	3.3 U	ug/Kg
1-Methylnaphthalene	3.9 U	3.3 U	ug/Kg
Acenaphthylene	3.9 U	3.3 U	ug/Kg
Acenaphthene	3.9 U	3.3 U	ug/Kg
Fluorene	3.9 U	3.3 U	ug/Kg
Phenanthrene	3.9 U	3.3 U	ug/Kg
Anthracene	3.9 U	3.3 U	ug/Kg
Fluoranthene	3.9 U	3.3 U	ug/Kg
Pyrene	3.9 U	3.3 U	ug/Kg
Chrysene	3.9 U	3.3 U	ug/Kg
Benzo(a)anthracene	3.9 U	3.3 U	ug/Kg
Benzo(b)fluoranthene	3.9 U	3.3 U	ug/Kg
Benzo(k)fluoranthene	3.9 U	3.3 U	ug/Kg
Benzo(a)pyrene	3.9 U	3.3 U	ug/Kg
Indeno(1,2,3-cd)pyrene	3.9 U	3.3 U	ug/Kg
Dibenzo(a,h)anthracene	3.9 U	3.3 U	ug/Kg
Benzo(g,h,i)perylene	3.9 U	3.3 U	ug/Kg

Surrogate:

% RECOV

% RECOV

LIMITS

p-Terphenyl	55	64	19-162
Date Prepared	02/26/03	02/26/03	
Date Analyzed	03/04/03 16:39	03/04/03 09:25	

MISCELLANEOUS

METHOD

MPT-283-SB-33

LAB BLANK

Units

Percent Solids	SM2540G	84	NA	%
Date Analyzed		02/25/03 12:00		

NA = Analysis not applicable for this sample.

U = Compound was analyzed for but not detected to the level shown.

CLIENT : Tetra Tech NUS
ADDRESS: 8640 Philips Highway
Suite 16
Jacksonville, FL 32256

REPORT # : JAX31729
DATE SUBMITTED: May 15, 2003
DATE REPORTED : June 1, 2003

PAGE 1 OF 13

ATTENTION: Mr. M. Peterson

SAMPLE IDENTIFICATION

Samples submitted and
identified by client as:

REFERENCE: 4195

Site 283

#1	-	MPT-283-SB34(1)	@	10:15	(05/15/03)
#2	-	MPT-283-SB34(3)	@	10:25	(05/15/03)
#3	-	MPT-283-SB35(1)	@	10:30	(05/15/03)
#4	-	MPT-283-SB35(3)	@	10:35	(05/15/03)
#5	-	MPT-283-SB36(1)	@	10:45	(05/15/03)
#6	-	MPT-283-SB36(3)	@	10:50	(05/15/03)
#7	-	MPT-283-SB37(1)	@	11:50	(05/15/03)
#8	-	MPT-283-SB37(3)	@	11:55	(05/15/03)
#9	-	MPT-283-SB38(1)	@	12:00	(05/15/03)
#10	-	MPT-283-SB38(3)	@	12:05	(05/15/03)
#11	-	MPT-283-SB39(1)	@	12:15	(05/15/03)
#12	-	MPT-283-SB39(3)	@	12:20	(05/15/03)
#13	-	EQUIP 1	@	10:00	(05/15/03)
#14	-	EQUIP 2	@	12:30	(05/15/03)
#15	-	MPT-283-SB28(1)	@	13:00	(05/18/03)

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. This data has been produced in accordance with NELAC Standards (July, 1999). This report shall not be reproduced except in full, without the written approval of the laboratory. Results for these procedures apply only to the samples as submitted.

Note: Analytical values are reported on a dry weight basis.

PROJECT MANAGER

Scott D. Martin

ENCO LABORATORIES
 REPORT # : JAX31729
 DATE REPORTED: June 1, 2003
 REFERENCE : 4195
 PROJECT NAME : Site 283

PAGE 2 OF 13

RESULTS OF ANALYSIS

<u>EPA METHOD 8270 - PAH Compounds by SIM</u>	<u>MPT-283-SB34 (1)</u>	<u>MPT-283-SB34 (3)</u>	<u>Units</u>
Naphthalene	3.5 U	3.8 U	ug/Kg
2-Methylnaphthalene	3.5 U	3.8 U	ug/Kg
1-Methylnaphthalene	3.5 U	3.8 U	ug/Kg
Acenaphthylene	3.5 U	3.8 U	ug/Kg
Acenaphthene	3.5 U	3.8 U	ug/Kg
Fluorene	3.5 U	3.8 U	ug/Kg
Phenanthrene	3.5 U	3.8 U	ug/Kg
Anthracene	3.5 U	3.8 U	ug/Kg
Fluoranthene	3.8	4.1	ug/Kg
Pyrene	3.5	3.8 U	ug/Kg
Chrysene	3.5 U	3.8 U	ug/Kg
Benzo(a)anthracene	3.5 U	3.8 U	ug/Kg
Benzo(b)fluoranthene	3.5 U	3.8 U	ug/Kg
Benzo(k)fluoranthene	3.5 U	3.8 U	ug/Kg
Benzo(a)pyrene	7.7	3.8 U	ug/Kg
Indeno(1,2,3-cd)pyrene	3.5 U	3.8 U	ug/Kg
Dibenzo(a,h)anthracene	3.5 U	3.8 U	ug/Kg
Benzo(g,h,i)perylene	3.5 U	3.8 U	ug/Kg
<u>Surrogate:</u>	<u>% RECOV</u>	<u>% RECOV</u>	<u>LIMITS</u>
p-Terphenyl	76	72	19-162
Date Prepared	05/16/03	05/16/03	
Date Analyzed	05/21/03 00:11	05/21/03 00:32	

<u>MISCELLANEOUS</u>	<u>METHOD</u>	<u>MPT-283-SB34 (1)</u>	<u>MPT-283-SB34 (3)</u>	<u>Units</u>
Percent Solids	SM2540G	95	87	%
Date Prepared		05/15/03 21:30	05/15/03 21:30	
Date Analyzed		05/16/03 14:30	05/16/03 14:30	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
 REPORT # : JAX31729
 DATE REPORTED: June 1, 2003
 REFERENCE : 4195
 PROJECT NAME : Site 283

PAGE 3 OF 13

RESULTS OF ANALYSIS

EPA METHOD 8270 - PAH Compounds by SIM

	<u>MPT-283-SB35 (1)</u>	<u>MPT-283-SB35 (3)</u>	<u>Units</u>
Naphthalene	3.5 U	3.9 U	ug/Kg
2-Methylnaphthalene	3.5 U	3.9 U	ug/Kg
1-Methylnaphthalene	3.5 U	3.9 U	ug/Kg
Acenaphthylene	3.5 U	3.9 U	ug/Kg
Acenaphthene	3.5 U	3.9 U	ug/Kg
Fluorene	3.5 U	3.9 U	ug/Kg
Phenanthrene	14	8.9	ug/Kg
Anthracene	5.0	5.0	ug/Kg
Fluoranthene	27	19	ug/Kg
Pyrene	20	14	ug/Kg
Chrysene	17	9.6	ug/Kg
Benzo(a)anthracene	15	9.3	ug/Kg
Benzo(b)fluoranthene	32	16	ug/Kg
Benzo(k)fluoranthene	17	9.3	ug/Kg
Benzo(a)pyrene	26	16	ug/Kg
Indeno(1,2,3-cd)pyrene	26	16	ug/Kg
Dibenzo(a,h)anthracene	3.5 U	3.9 U	ug/Kg
Benzo(g,h,i)perylene	28	18	ug/Kg
<u>Surrogate:</u>	<u>% RECOV</u>	<u>% RECOV</u>	<u>LIMITS</u>
p-Terphenyl	72	73	19-162
Date Prepared	05/16/03	05/16/03	
Date Analyzed	05/21/03 00:54	05/21/03 01:15	

<u>MISCELLANEOUS</u>	<u>METHOD</u>	<u>MPT-283-SB35 (1)</u>	<u>MPT-283-SB35 (3)</u>	<u>Units</u>
Percent Solids	SM2540G	93	85	%
Date Prepared		05/15/03 21:30	05/15/03 21:30	
Date Analyzed		05/16/03 14:30	05/16/03 14:30	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
 REPORT # : JAX31729
 DATE REPORTED: June 1, 2003
 REFERENCE : 4195
 PROJECT NAME : Site 283

PAGE 4 OF 13

RESULTS OF ANALYSIS

<u>EPA METHOD 8270 - PAH Compounds by SIM</u>	<u>MPT-283-SB36 (1)</u>	<u>MPT-283-SB36 (3)</u>	<u>Units</u>
Naphthalene	3.4 U	3.5 U	ug/Kg
2-Methylnaphthalene	3.4 U	3.5 U	ug/Kg
1-Methylnaphthalene	3.4 U	3.5 U	ug/Kg
Acenaphthylene	3.4 U	3.5 U	ug/Kg
Acenaphthene	3.4 U	3.5 U	ug/Kg
Fluorene	3.4 U	3.5 U	ug/Kg
Phenanthrene	3.4 U	3.5 U	ug/Kg
Anthracene	3.4 U	3.5 U	ug/Kg
Fluoranthene	5.8	3.5 U	ug/Kg
Pyrene	4.8	3.5 U	ug/Kg
Chrysene	3.4 U	3.5 U	ug/Kg
Benzo(a)anthracene	3.4 U	3.5 U	ug/Kg
Benzo(b)fluoranthene	5.0	3.5 U	ug/Kg
Benzo(k)fluoranthene	3.4 U	3.5 U	ug/Kg
Benzo(a)pyrene	8.2	3.5 U	ug/Kg
Indeno(1,2,3-cd)pyrene	8.5	3.5 U	ug/Kg
Dibenzo(a,h)anthracene	3.4 U	3.5 U	ug/Kg
Benzo(g,h,i)perylene	10	3.5 U	ug/Kg
<u>Surrogate:</u>	<u>% RECOV</u>	<u>% RECOV</u>	<u>LIMITS</u>
p-Terphenyl	58	59	19-162
Date Prepared	05/16/03	05/16/03	
Date Analyzed	05/21/03 01:37	05/21/03 01:59	

<u>MISCELLANEOUS</u>	<u>METHOD</u>	<u>MPT-283-SB36 (1)</u>	<u>MPT-283-SB36 (3)</u>	<u>Units</u>
Percent Solids	SM2540G	96	93	%
Date Prepared		05/15/03 21:30	05/15/03 21:30	
Date Analyzed		05/16/03 14:30	05/16/03 14:30	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
 REPORT # : JAX31729
 DATE REPORTED: June 1, 2003
 REFERENCE : 4195
 PROJECT NAME : Site 283

PAGE 5 OF 13

RESULTS OF ANALYSIS

<u>EPA METHOD 8270 - PAH Compounds by SIM</u>	<u>MPT-283-SB37 (1)</u>	<u>MPT-283-SB37 (3)</u>	<u>Units</u>
Naphthalene	3.4 U	3.6 U	ug/Kg
2-Methylnaphthalene	3.4 U	3.6 U	ug/Kg
1-Methylnaphthalene	3.4 U	3.6 U	ug/Kg
Acenaphthylene	3.7	3.6	ug/Kg
Acenaphthene	3.4 U	3.6 U	ug/Kg
Fluorene	3.4 U	3.6 U	ug/Kg
Phenanthrene	17	15	ug/Kg
Anthracene	6.7	6.2	ug/Kg
Fluoranthene	39	32	ug/Kg
Pyrene	30	24	ug/Kg
Chrysene	23	18	ug/Kg
Benzo(a)anthracene	21	15	ug/Kg
Benzo(b)fluoranthene	45	31	ug/Kg
Benzo(k)fluoranthene	26	21	ug/Kg
Benzo(a)pyrene	34	25	ug/Kg
Indeno(1,2,3-cd)pyrene	36	24	ug/Kg
Dibenzo(a,h)anthracene	3.4 U	3.6 U	ug/Kg
Benzo(g,h,i)perylene	38	25	ug/Kg
<u>Surrogate:</u>	<u>% RECOV</u>	<u>% RECOV</u>	<u>LIMITS</u>
p-Terphenyl	57	56	19-162
Date Prepared	05/16/03	05/16/03	
Date Analyzed	05/21/03 02:20	05/21/03 02:42	

<u>MISCELLANEOUS</u>	<u>METHOD</u>	<u>MPT-283-SB37 (1)</u>	<u>MPT-283-SB37 (3)</u>	<u>Units</u>
Percent Solids	SM2540G	98	91	%
Date Prepared		05/15/03 21:30	05/15/03 21:30	
Date Analyzed		05/16/03 14:30	05/16/03 14:30	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
 REPORT # : JAX31729
 DATE REPORTED: June 1, 2003
 REFERENCE : 4195
 PROJECT NAME : Site 283

PAGE 6 OF 13

RESULTS OF ANALYSIS

<u>EPA METHOD 8270 - PAH Compounds by SIM</u>	<u>MPT-283-SB38 (1)</u>	<u>MPT-283-SB38 (3)</u>	<u>Units</u>
Naphthalene	3.4 U	3.9 U	ug/Kg
2-Methylnaphthalene	3.4 U	3.9 U	ug/Kg
1-Methylnaphthalene	3.4 U	3.9 U	ug/Kg
Acenaphthylene	3.4 U	3.9 U	ug/Kg
Acenaphthene	3.4 U	3.9 U	ug/Kg
Fluorene	3.4 U	3.9 U	ug/Kg
Phenanthrene	3.4 U	3.9 U	ug/Kg
Anthracene	3.4 U	3.9 U	ug/Kg
Fluoranthene	3.4	3.9 U	ug/Kg
Pyrene	3.4 U	3.9 U	ug/Kg
Chrysene	3.4 U	3.9 U	ug/Kg
Benzo(a)anthracene	3.4 U	3.9 U	ug/Kg
Benzo(b)fluoranthene	3.4 U	3.9 U	ug/Kg
Benzo(k)fluoranthene	3.4 U	3.9 U	ug/Kg
Benzo(a)pyrene	3.4 U	3.9 U	ug/Kg
Indeno(1,2,3-cd)pyrene	3.4 U	3.9 U	ug/Kg
Dibenzo(a,h)anthracene	3.4 U	3.9 U	ug/Kg
Benzo(g,h,i)perylene	3.4 U	3.9 U	ug/Kg
<u>Surrogate:</u>	<u>% RECOV</u>	<u>% RECOV</u>	<u>LIMITS</u>
p-Terphenyl	39	57	19-162
Date Prepared	05/16/03	05/16/03	
Date Analyzed	05/21/03 03:03	05/21/03 03:25	

<u>MISCELLANEOUS</u>	<u>METHOD</u>	<u>MPT-283-SB38 (1)</u>	<u>MPT-283-SB38 (3)</u>	<u>Units</u>
Percent Solids	SM2540G	96	84	%
Date Prepared		05/15/03 21:30	05/15/03 21:30	
Date Analyzed		05/16/03 14:30	05/16/03 14:30	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
 REPORT # : JAX31729
 DATE REPORTED: June 1, 2003
 REFERENCE : 4195
 PROJECT NAME : Site 283

PAGE 7 OF 13

RESULTS OF ANALYSIS

<u>EPA METHOD 8270 - PAH Compounds by SIM</u>	<u>MPT-283-SB39 (1)</u>	<u>MPT-283-SB39 (3)</u>	<u>Units</u>
Naphthalene	5.0	3.8 U	ug/Kg
2-Methylnaphthalene	5.0	3.8 U	ug/Kg
1-Methylnaphthalene	3.7	3.8 U	ug/Kg
Acenaphthylene	4.0	4.2	ug/Kg
Acenaphthene	17	14	ug/Kg
Fluorene	12	15	ug/Kg
Phenanthrene	180	170	ug/Kg
Anthracene	26	30	ug/Kg
Fluoranthene	220	210	ug/Kg
Pyrene	160	140	ug/Kg
Chrysene	110	98	ug/Kg
Benzo(a)anthracene	99	85	ug/Kg
Benzo(b)fluoranthene	200	140	ug/Kg
Benzo(k)fluoranthene	78	88	ug/Kg
Benzo(a)pyrene	120	110	ug/Kg
Indeno(1,2,3-cd)pyrene	110	88	ug/Kg
Dibenzo(a,h)anthracene	3.4 U	3.8 U	ug/Kg
Benzo(g,h,i)perylene	110	96	ug/Kg
<u>Surrogate:</u>	<u>% RECOV</u>	<u>% RECOV</u>	<u>LIMITS</u>
p-Terphenyl	53	87	19-162
Date Prepared	05/16/03	05/16/03	
Date Analyzed	05/21/03 03:46	05/21/03 04:08	

<u>MISCELLANEOUS</u>	<u>METHOD</u>	<u>MPT-283-SB39 (1)</u>	<u>MPT-283-SB39 (3)</u>	<u>Units</u>
Percent Solids	SM2540G	98	86	%
Date Prepared		05/15/03 21:30	05/15/03 21:30	
Date Analyzed		05/16/03 14:30	05/16/03 14:30	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
 REPORT # : JAX31729
 DATE REPORTED: June 1, 2003
 REFERENCE : 4195
 PROJECT NAME : Site 283

PAGE 8 OF 13

RESULTS OF ANALYSIS

EPA METHOD 8270 - PAH Compounds by SIM

	<u>EQUIP 1</u>	<u>EQUIP 2</u>	<u>Units</u>
Naphthalene	0.10 U	0.10 U	ug/L
2-Methylnaphthalene	0.10 U	0.10 U	ug/L
1-Methylnaphthalene	0.10 U	0.10 U	ug/L
Acenaphthylene	0.10 U	0.10 U	ug/L
Acenaphthene	0.10 U	0.10 U	ug/L
Fluorene	0.10 U	0.10 U	ug/L
Phenanthrene	0.10 U	0.10 U	ug/L
Anthracene	0.10 U	0.10 U	ug/L
Fluoranthene	0.10 U	0.10 U	ug/L
Pyrene	0.10 U	0.10 U	ug/L
Chrysene	0.10 U	0.10 U	ug/L
Benzo(a)anthracene	0.10 U	0.10 U	ug/L
Benzo(b)fluoranthene	0.10 U	0.10 U	ug/L
Benzo(k)fluoranthene	0.10 U	0.10 U	ug/L
Benzo(a)pyrene	0.10 U	0.10 U	ug/L
Indeno(1,2,3-cd)pyrene	0.10 U	0.10 U	ug/L
Dibenzo(a,h)anthracene	0.10 U	0.10 U	ug/L
Benzo(g,h,i)perylene	0.10 U	0.10 U	ug/L
<u>Surrogate:</u>	<u>% RECOV</u>	<u>% RECOV</u>	<u>LIMITS</u>
p-Terphenyl	66	64	20-148
Date Prepared	05/19/03	05/19/03	
Date Analyzed	05/20/03 19:08	05/20/03 19:29	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
 REPORT # : JAX31729
 DATE REPORTED: June 1, 2003
 REFERENCE : 4195
 PROJECT NAME : Site 283

PAGE 9 OF 13

RESULTS OF ANALYSIS

EPA METHOD 8270 - PAH Compounds by SIM

	<u>LAB BLANK</u>	<u>Units</u>
Naphthalene	0.10 U	ug/L
2-Methylnaphthalene	0.10 U	ug/L
1-Methylnaphthalene	0.10 U	ug/L
Acenaphthylene	0.10 U	ug/L
Acenaphthene	0.10 U	ug/L
Fluorene	0.10 U	ug/L
Phenanthrene	0.10 U	ug/L
Anthracene	0.10 U	ug/L
Fluoranthene	0.10 U	ug/L
Pyrene	0.10 U	ug/L
Chrysene	0.10 U	ug/L
Benzo(a)anthracene	0.10 U	ug/L
Benzo(b)fluoranthene	0.10 U	ug/L
Benzo(k)fluoranthene	0.10 U	ug/L
Benzo(a)pyrene	0.10 U	ug/L
Indeno(1,2,3-cd)pyrene	0.10 U	ug/L
Dibenzo(a,h)anthracene	0.10 U	ug/L
Benzo(g,h,i)perylene	0.10 U	ug/L
<u>Surrogate:</u>	<u>% RECOV</u>	<u>LIMITS</u>
p-Terphenyl	66	20-148
Date Prepared	05/19/03	
Date Analyzed	05/20/03 17:20	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
 REPORT # : JAX31729
 DATE REPORTED: June 1, 2003
 REFERENCE : 4195
 PROJECT NAME : Site 283

PAGE 10 OF 13

RESULTS OF ANALYSIS

<u>EPA METHOD 8270 - PAH Compounds by SIM</u>	<u>MPT-283-SB28(1)</u>	<u>LAB BLANK</u>	<u>Units</u>
Naphthalene	3.4 U	3.3 U	ug/Kg
2-Methylnaphthalene	3.4 U	3.3 U	ug/Kg
1-Methylnaphthalene	3.4 U	3.3 U	ug/Kg
Acenaphthylene	3.4 U	3.3 U	ug/Kg
Acenaphthene	7.6	3.3 U	ug/Kg
Fluorene	7.2	3.3 U	ug/Kg
Phenanthrene	79	3.3 U	ug/Kg
Anthracene	18	3.3 U	ug/Kg
Fluoranthene	140	3.3 U	ug/Kg
Pyrene	100	3.3 U	ug/Kg
Chrysene	67	3.3 U	ug/Kg
Benzo(a)anthracene	70	3.3 U	ug/Kg
Benzo(b)fluoranthene	79	3.3 U	ug/Kg
Benzo(k)fluoranthene	48	3.3 U	ug/Kg
Benzo(a)pyrene	67	3.3 U	ug/Kg
Indeno(1,2,3-cd)pyrene	38	3.3 U	ug/Kg
Dibenzo(a,h)anthracene	3.4 U	3.3 U	ug/Kg
Benzo(g,h,i)perylene	41	3.3 U	ug/Kg
<u>Surrogate:</u>	<u>% RECOV</u>	<u>% RECOV</u>	<u>LIMITS</u>
p-Terphenyl	93	63	19-162
Date Prepared	05/21/03	05/16/03	
Date Analyzed	05/22/03 14:22	05/20/03 22:44	

<u>MISCELLANEOUS</u>	<u>METHOD</u>	<u>MPT-283-SB28(1)</u>	<u>LAB BLANK</u>	<u>Units</u>
Percent Solids	SM2540G	96	NA	%
Date Prepared		05/23/03 11:00		
Date Analyzed		05/23/03 19:00		

NA = Analysis not applicable for this sample.

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
 REPORT # : JAX31729
 DATE REPORTED: June 1, 2003
 REFERENCE : 4195
 PROJECT NAME : Site 283

PAGE 11 OF 13

RESULTS OF ANALYSIS

EPA METHOD 8270 - PAH Compounds by SIM

	<u>LAB BLANK</u>	<u>Units</u>
Naphthalene	3.3 U	ug/Kg
2-Methylnaphthalene	3.3 U	ug/Kg
1-Methylnaphthalene	3.3 U	ug/Kg
Acenaphthylene	3.3 U	ug/Kg
Acenaphthene	3.3 U	ug/Kg
Fluorene	3.3 U	ug/Kg
Phenanthrene	3.3 U	ug/Kg
Anthracene	3.3 U	ug/Kg
Fluoranthene	3.3 U	ug/Kg
Pyrene	3.3 U	ug/Kg
Chrysene	3.3 U	ug/Kg
Benzo(a)anthracene	3.3 U	ug/Kg
Benzo(b)fluoranthene	3.3 U	ug/Kg
Benzo(k)fluoranthene	3.3 U	ug/Kg
Benzo(a)pyrene	3.3 U	ug/Kg
Indeno(1,2,3-cd)pyrene	3.3 U	ug/Kg
Dibenzo(a,h)anthracene	3.3 U	ug/Kg
Benzo(g,h,i)perylene	3.3 U	ug/Kg
<u>Surrogate:</u>	<u>% RECOV</u>	<u>LIMITS</u>
p-Terphenyl	79	19-162
Date Prepared	05/21/03	
Date Analyzed	05/22/03 13:39	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
REPORT # : JAX31729
DATE REPORTED: June 1, 2003
REFERENCE : 4195
PROJECT NAME : Site 283

PAGE 12 OF 13

LABORATORY CERTIFICATIONS

Laboratory Certification: NELAC:E82277

All analyses reported with this project were analyzed by the facility indicated unless identified below.

ENCO LABORATORIES
 REPORT # : JAX31729
 DATE REPORTED: June 1, 2003
 REFERENCE : 4195
 PROJECT NAME : Site 283

PAGE 13 OF 13

QUALITY CONTROL DATA

<u>Parameter</u>	<u>% RECOVERY</u> <u>MS/MSD/LCS</u>	<u>ACCEPT</u> <u>LIMITS</u>	<u>% RPD</u> <u>MS/MSD</u>	<u>ACCEPT</u> <u>LIMITS</u>
EPA Method 8270				
Naphthalene	58/ 60/ 58	30-112	3	28
Acenaphthene	82/ 84/ 80	28-113	2	32
Benzo(a)pyrene	135/144/129	39-148	6	38
Benzo(g,h,i)perylene	84/100/ 88	20-130	17	43
Naphthalene	62/ 72/ 61	20-131	15	29
Acenaphthene	69/ 86/ 74	24-132	22	23
Benzo(a)pyrene	137/146/122	34-140	6	28
Benzo(g,h,i)perylene	152/183/116	31-152	18	21
Naphthalene	62/ 72/ 72	20-131	15	29
Acenaphthene	69/ 86/ 84	24-132	22	23
Benzo(a)pyrene	137/146/126	34-140	6	28
Benzo(g,h,i)perylene	152/183/104	31-152	18	21

< = Less Than
 MS = Matrix Spike
 MSD = Matrix Spike Duplicate
 LCS = Laboratory Control Standard
 RPD = Relative Percent Difference

ENCO LABORATORIES
 REPORT # : JAX38346
 DATE REPORTED: March 31, 2004
 REFERENCE : 4195
 PROJECT NAME : Site 283

PAGE 2 OF 5

RESULTS OF ANALYSIS

EPA METHOD 8270 - PAH Compounds by SIM

	<u>MPT-283-SB-54-3</u>	<u>Units</u>
Naphthalene	35 U	ug/Kg
2-Methylnaphthalene	35 U	ug/Kg
1-Methylnaphthalene	35 U	ug/Kg
Acenaphthylene	35 U	ug/Kg
Acenaphthene	110	ug/Kg
Fluorene	56	ug/Kg
Phenanthrene	1300	ug/Kg
Anthracene	140	ug/Kg
Fluoranthene	1700	ug/Kg
Pyrene	1200	ug/Kg
Chrysene	720	ug/Kg
Benzo(a)anthracene	540	ug/Kg
Benzo(b)fluoranthene	850	ug/Kg
Benzo(k)fluoranthene	380	ug/Kg
Benzo(a)pyrene	500	ug/Kg
Indeno(1,2,3-cd)pyrene	290	ug/Kg
Dibenzo(a,h)anthracene	100	ug/Kg
Benzo(g,h,i)perylene	330	ug/Kg
<u>Surrogate:</u>	<u>% RECOV</u>	<u>LIMITS</u>
p-Terphenyl	92	19-162
Date Prepared	03/26/04	
Date Analyzed	03/27/04 22:47	

<u>Miscellaneous</u>	<u>METHOD</u>	<u>MPT-283-SB-54-3</u>	<u>Units</u>
Percent Solids	WETS/72	94	%
Date Prepared		03/30/04	
Date Analyzed		03/31/04 11:00	

U = Compound was analyzed for but not detected to the level shown.

CLIENT : Tetra Tech NUS
ADDRESS: 8640 Philips Highway
Suite 16
Jacksonville, FL 32256

REPORT # : JAX38278
DATE SUBMITTED: March 22, 2004
DATE REPORTED : March 29, 2004

PAGE 1 OF 6

ATTENTION: Mr. M. Peterson

SAMPLE IDENTIFICATION

Samples submitted and
identified by client as:

REFERENCE: 4195

Site 283

03/22/04

JAX38278-1	:	MPT-283-SB-44-3	@	12:45
JAX38278-2	:	MPT-283-SB-45-3	@	13:00
JAX38278-3	:	MPT-283-SB-46-3	@	13:15
JAX38278-4	:	MPT-283-SB-47-3	@	13:30
JAX38278-5	:	MPT-283-SB-48-3	@	13:45

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. This data has been produced in accordance with NELAC Standards (May, 2001). This report shall not be reproduced except in full, without the written approval of the laboratory. Results for these procedures apply only to the samples as submitted.

Note: Analytical values are reported on a dry weight basis.

PROJECT MANAGER

Scott D. Martin

ENCO LABORATORIES
 REPORT # : JAX38278
 DATE REPORTED: March 29, 2004
 REFERENCE : 4195
 PROJECT NAME : Site 283

PAGE 2 OF 6

RESULTS OF ANALYSIS

<u>EPA METHOD 8270 - PAH Compounds by SIM</u>	<u>MPT-283-SB-44-3</u>	<u>MPT-283-SB-45-3</u>	<u>Units</u>
Benzo(a)anthracene	260	91	ug/Kg
Benzo(b)fluoranthene	350	100	ug/Kg
Benzo(a)pyrene	200	49	ug/Kg
Indeno(1,2,3-cd)pyrene	87	38 U	ug/Kg
Dibenzo(a,h)anthracene	36 U	38 U	ug/Kg
<u>Surrogate:</u>	<u>% RECOV</u>	<u>% RECOV</u>	<u>LIMITS</u>
p-Terphenyl	105	110	19-162
Date Prepared	03/24/04	03/24/04	
Date Analyzed	03/26/04 14:36	03/26/04 16:04	

<u>Miscellaneous</u>	<u>METHOD</u>	<u>MPT-283-SB-44-3</u>	<u>MPT-283-SB-45-3</u>	<u>Units</u>
Percent Solids	WETS/72	92	88	%
Date Prepared		03/23/04	03/23/04	
Date Analyzed		03/24/04 11:00	03/24/04 11:00	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
 REPORT # : JAX38278
 DATE REPORTED: March 29, 2004
 REFERENCE : 4195
 PROJECT NAME : Site 283

PAGE 3 OF 6

RESULTS OF ANALYSIS

<u>EPA METHOD 8270 - PAH Compounds by SIM</u>	<u>MPT-283-SB-46-3</u>	<u>MPT-283-SB-47-3</u>	<u>Units</u>
Benzo(a)anthracene	35 U	36 U	ug/Kg
Benzo(b)fluoranthene	35 U	36 U	ug/Kg
Benzo(a)pyrene	35 U	36 U	ug/Kg
Indeno(1,2,3-cd)pyrene	35 U	36 U	ug/Kg
Dibenzo(a,h)anthracene	35 U	36 U	ug/Kg
<u>Surrogate:</u>	<u>% RECOV</u>	<u>% RECOV</u>	<u>LIMITS</u>
p-Terphenyl	94	95	19-162
Date Prepared	03/24/04	03/24/04	
Date Analyzed	03/26/04 16:33	03/26/04 18:17	

<u>Miscellaneous</u>	<u>METHOD</u>	<u>MPT-283-SB-46-3</u>	<u>MPT-283-SB-47-3</u>	<u>Units</u>
Percent Solids	WETS/72	94	93	%
Date Prepared		03/23/04	03/23/04	
Date Analyzed		03/24/04 11:00	03/24/04 11:00	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
 REPORT # : JAX38278
 DATE REPORTED: March 29, 2004
 REFERENCE : 4195
 PROJECT NAME : Site 283

PAGE 4 OF 6

RESULTS OF ANALYSIS

<u>EPA METHOD 8270 - PAH Compounds by SIM</u>	<u>MPT-283-SB-48-3</u>	<u>LAB BLANK</u>	<u>Units</u>
Benzo(a)anthracene	35 U	33 U	ug/Kg
Benzo(b)fluoranthene	35 U	33 U	ug/Kg
Benzo(a)pyrene	35 U	33 U	ug/Kg
Indeno(1,2,3-cd)pyrene	35 U	33 U	ug/Kg
Dibenzo(a,h)anthracene	35 U	33 U	ug/Kg
<u>Surrogate:</u>	<u>% RECOV</u>	<u>% RECOV</u>	<u>LIMITS</u>
p-Terphenyl	96	99	19-162
Date Prepared	03/24/04	03/24/04	
Date Analyzed	03/26/04 18:44	03/26/04 12:43	

<u>Miscellaneous</u>	<u>METHOD</u>	<u>MPT-283-SB-48-3</u>	<u>LAB BLANK</u>	<u>Units</u>
Percent Solids	WETS/72	95	NA	%
Date Prepared		03/23/04		
Date Analyzed		03/24/04 11:00		

NA = Analysis not applicable for this sample.
 U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES

REPORT # : JAX38278

DATE REPORTED: March 29, 2004

REFERENCE : 4195

PROJECT NAME : Site 283

PAGE 5 OF 6

LABORATORY CERTIFICATIONS

Laboratory Certification: NELAC:E82277

All analyses reported with this project were analyzed by the facility indicated unless identified below.

ENCO LABORATORIES
REPORT # : JAX38278
DATE REPORTED: March 29, 2004
REFERENCE : 4195
PROJECT NAME : Site 283

PAGE 6 OF 6

QUALITY CONTROL DATA

<u>Parameter</u>	<u>% RECOVERY</u> <u>LCS/MS/MSD</u>	<u>LCS</u> <u>LIMITS</u>	<u>MS/MSD</u> <u>LIMITS</u>	<u>RPD</u> <u>MS/MSD</u>	<u>RPD</u> <u>LIMITS</u>
<u>EPA Method 8270</u>					
Naphthalene	82/ 81/ 79	48-88	20-131	2	29
Acenaphthene	80/ 77/ 76	57-96	24-132	1	23
Benzo(a)pyrene	62/ 82/ 84	37-134	34-140	2	28
Benzo(g,h,i)perylene	52/ 70/ 71	11-145	31-152	1	21

< = Less Than
MS = Matrix Spike
MSD = Matrix Spike Duplicate
LCS = Laboratory Control Standard
RPD = Relative Percent Difference



Tetra Tech NUS

INTERNAL CORRESPONDENCE

TO: M. PETERSON **DATE:** MARCH 3, 2004
FROM: SETH C. STAFFEN **COPIES:** DV FILE
SUBJECT: ORGANIC DATA VALIDATION – PAH
CTO 230, NS MAYPORT
SDG: 36653
SAMPLES: 4/SOIL BORINGS/PAH
MPT-283-SB40-3 MPT-283-SB41-3
MPT-283-SB42-3 MPT-283-SB43-3

OVERVIEW

The sample set for CTO 230, SDG 36653; Naval Station (NS) Mayport consists of four (4) soil boring environmental samples. The samples were analyzed for select polynuclear aromatic hydrocarbons. No field duplicate pairs were included in this SDG.

The samples were collected on January 14th, 2004 Tetra Tech NUS, Inc. and analyzed by ENCO Laboratories. All analyses were performed in accordance with Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria and analyzed according to SW 846 Method 8270-SIM analytical and reporting protocols. The data in this SDG was validated with regard to the following parameters:

- * • Data Completeness
- * • Holding Times
- Initial/Continuing Calibrations
- * • Laboratory Method Blank Results
- Detection Limits

The symbol (*) indicates that all quality control criteria were met for this parameter. Problems affecting data quality are discussed below; documentation supporting these findings is presented in Appendix C. Qualified analytical results are presented in Appendix A. Results as reported by the laboratory are presented in Appendix B.

PAH FRACTION

The continuing calibration on 1/20/04 at 1327 contained percent differences (%Ds) that exceeded the 25% quality control limit for indeno(1,2,3-cd)pyrene and dibenzo(a,h)anthracene. No qualification action was taken because the exceedances were less than 90%.

MEMO TO: M. PETERSON -36656
DATE: 3/3/2004 – PAGE 2

ADDITIONAL COMMENTS

Samples MPT-283-SB40-3, MPT-283-SB41-3, and MPT-283-SB43-3 were analyzed at a 10X dilution. Sample MPT-283-SB42-3 was analyzed at a 100X dilution. The dilution caused elevated reporting limits for nondetected PAHs.

The laboratory reported only five PAHs on the Form Is and 18 PAHs on the EDD. According to the statement of work, the laboratory should have reported 18 PAHs on the Form Is. Per conversations with the ENCO and the project office, it was confirmed that only 5 PAHs were to be reported. The EDD was amended to list only the 5 PAHs.

EXECUTIVE SUMMARY

Laboratory Performance: Continuing calibration (%D) noncompliances were noted.

Other Factors Affecting Data Quality: None.

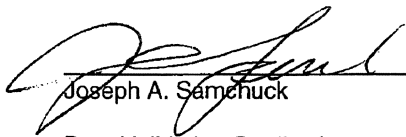
The data for these analyses were reviewed with reference to the EPA Functional Guidelines for Organic Data Validation (October 1999) and the NFESC guidelines "Navy IRCDQM" (September 1999). The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC guidelines and the Quality Assurance Project Plan (QAPP)."



Seth C. Staffen

Environmental Scientist/Data Validator
Tetra Tech NUS



Joseph A. Samchuck

Data Validation Quality Assurance Officer
TetraTech NUS

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A
QUALIFIED ANALYTICAL RESULTS

Qualifier Codes:

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
- C01 = GC/MS Tuning Noncompliance
- D = MS/MSD Recovery Noncompliance
- E = LCS/LCSD Recovery Noncompliance
- F = Lab Duplicate Imprecision
- G = Field Duplicate Imprecision
- H = Holding Time Exceedance
- I = ICP Serial Dilution Noncompliance
- J = GFAA PDS - GFAA MSA's $r < 0.995$
- K = ICP Interference - includes ICS % R Noncompliance
- L = Instrument Calibration Range Exceedance
- M = Sample Preservation Noncompliance
- N = Internal Standard Noncompliance
- N01 = Internal Standard Recovery Noncompliance Dioxins
- N02 = Recovery Standard Noncompliance Dioxins
- N03 = Clean-up Standard Noncompliance Dioxins
- O = Poor Instrument Performance (i.e., base-time drifting)
- P = Uncertainty near detection limit ($< 2 \times \text{IDL}$ for inorganics and $< \text{CRQL}$ for organics)
- Q = Other problems (can encompass a number of issues; i.e. chromatography, interferences, etc.)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = % Difference between columns/detectors $> 25\%$ for positive results determined via GC/HPLC
- V = Non-linear calibrations; correlation coefficient $r < 0.995$
- W = EMPC result
- X = Signal to noise response drop
- Y = Percent solids $< 30\%$
- Z = Uncertainty at 2 sigma deviation is less than sample activity

PROJ_NO: 4195

SDG: 36653 MEDIA: SOIL DATA FRACTION: PAH

nsample MPT-283-SB40-3
samp_date 1/14/2004
lab_id JAX36653-1
qc_type NM
units UG/KG
Pct_Solids 88.0
DUP_OF:

Parameter	Result	Val Qual	Qual Code
BENZO(A)ANTHRACENE	950		
BENZO(A)PYRENE	720		
BENZO(B)FLUORANTHENE	830		
DIBENZO(A,H)ANTHRACENE	250		
INDENO(1,2,3-CD)PYRENE	740		

nsample MPT-283-SB41-3
samp_date 1/14/2004
lab_id JAX36653-2
qc_type NM
units UG/KG
Pct_Solids 90.0
DUP_OF:

Parameter	Result	Val Qual	Qual Code
BENZO(A)ANTHRACENE	1600		
BENZO(A)PYRENE	1100		
BENZO(B)FLUORANTHENE	1200		
DIBENZO(A,H)ANTHRACENE	120		
INDENO(1,2,3-CD)PYRENE	1100		

nsample MPT-283-SB42-3
samp_date 1/14/2004
lab_id JAX36653-3
qc_type NM
units UG/KG
Pct_Solids 92.0
DUP_OF:

Parameter	Result	Val Qual	Qual Code
BENZO(A)ANTHRACENE	9800		
BENZO(A)PYRENE	8000		
BENZO(B)FLUORANTHENE	10000		
DIBENZO(A,H)ANTHRACENE	2200		
INDENO(1,2,3-CD)PYRENE	5400		

PROJ_NO: 4195

SDG: 36653 MEDIA: SOIL DATA FRACTION: PAH

nsample MPT-283-SB43-3
samp_date 1/14/2004
lab_id JAX36653-4
qc_type NM
units UG/KG
Pct_Solids 91.0
DUP_OF:

Parameter	Result	Val Qual	Qual Code
BENZO(A)ANTHRACENE	36	U	
BENZO(A)PYRENE	36	U	
BENZO(B)FLUORANTHENE	36	U	
DIBENZO(A,H)ANTHRACENE	36	U	
INDENO(1,2,3-CD)PYRENE	36	U	

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

RESULTS OF ANALYSIS

**EPA METHOD 8270 -
PAH Compounds by SIM****MPT-283-SB-49-3****Units**

Naphthalene	35 U	ug/Kg
2-Methylnaphthalene	35 U	ug/Kg
1-Methylnaphthalene	35 U	ug/Kg
Acenaphthylene	35 U	ug/Kg
Acenaphthene	110	ug/Kg
Fluorene	56	ug/Kg
Phenanthrene	1300	ug/Kg
Anthracene	140	ug/Kg
Fluoranthene	1700	ug/Kg
Pyrene	1200	ug/Kg
Chrysene	720	ug/Kg
Benzo(a)anthracene	540	ug/Kg
Benzo(b)fluoranthene	850	ug/Kg
Benzo(k)fluoranthene	380	ug/Kg
Benzo(a)pyrene	500	ug/Kg
Indeno(1,2,3-cd)pyrene	290	ug/Kg
Dibenzo(a,h)anthracene	100	ug/Kg
Benzo(g,h,i)perylene	330	ug/Kg

Surrogate:**% RECOV****LIMITS**

p-Terphenyl	92	19-162
Date Prepared	03/26/04	
Date Analyzed	03/27/04 22:47	

Miscellaneous**METHOD****MPT-283-SB-49-3****Units**

Percent Solids	WETS/72	94	%
Date Prepared		03/30/04	
Date Analyzed		03/31/04 11:00	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES**REPORT #** : JAX38346**DATE REPORTED:** March 31, 2004**REFERENCE** : 4195**PROJECT NAME** : Site 283

APPENDIX C
MONITORING WELL SHEET



Tetra Tech NUS, Inc.

WELL No.:

MPT-283-MW1

MONITORING WELL SHEET

PROJECT:	<u>NS MPT</u>	DRILLING Co.:	<u>Preferred</u>	BORING No.:	<u>MW-1</u>
PROJECT No.:	<u>N4195</u>	DRILLER:	<u>Tim Colvard</u>	DATE COMPLETED:	<u>7.23.02</u>
SITE:	<u>Bld 283</u>	DRILLING METHOD:	<u>HS</u>	NORTHING:	<u> </u>
GEOLOGIST:	<u> </u>	DEV. METHOD:	<u>Cent. Pump</u>	EASTING:	<u> </u>

	Elevation / Depth of Top of Riser:	<u>NA /</u>
	Elevation / Height of Top of Surface Casing:	<u>NA /</u>
	I.D. of Surface Casing:	<u>8"</u>
	Type of Surface Casing:	<u>Steel</u>
	Type of Surface Seal:	<u>Quikreet</u>
	I.D. of Riser:	<u>2"</u>
	Type of Riser:	<u>PVC</u>
	Borehole Diameter:	<u>8"</u>
	Elevation / Depth Top of Rock:	<u>/</u>
	Type of Backfill:	<u>Type 1</u> <u>Portland Grout</u>
	Elevation / Depth of Seal:	<u>/ 0.5'</u>
	Type of Seal:	<u>30/65 Sand</u>
	Elevation / Depth of Top of Filter Pack:	<u>/ 1.5'</u>
	Elevation / Depth of Top of Screen:	<u>/ 3'</u>
	Type of Screen:	<u>PVC</u>
Slot Size x Length:	<u>0.01 inch</u>	
I.D. of Screen:	<u>2"</u>	
Type of Filter Pack:	<u>20/30</u>	
Elevation / Depth of Bottom of Screen:	<u>/ 13'</u>	
Elevation / Depth of Bottom of Filter Pack:	<u>/ 13.5'</u>	
Type of Backfill Below Well:	<u> </u>	
Elevation / Total Depth of Borehole:	<u>/ 13.5'</u>	

Not to Scale